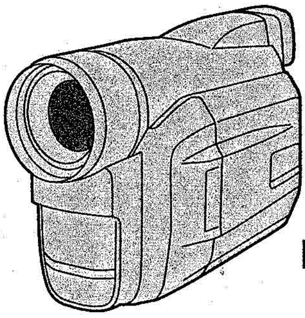
JVC

SERVICE MANUAL

DIGITAL VIDEO CAMERA

GR-DVL25A/DVL45A



Mini DV PAL

Regarding service information other than these sections, refer to the GR-DVL20EG, DVL40EG service manual (No. 86511) Also, be sure to note important safety precautions provided in the service manual.

SPECIFICATIONS

Camcorder

General

Power supply	DC 6.3 V ⎓ (Using AC Power Adapter/Charger) DC 7.2 V ⎓ (Using battery pack)
Power consumption	
LCD monitor off, viewfinder on	
GR-DVL45	Approx. 4.7 W
GR-DVL25	Approx. 4.6 W
LCD monitor on, viewfinder off	
GR-DVL45	Approx. 5.8 W
GR-DVL25	Approx. 5.6 W
Video light (GR-DVL45 only)	Approx. 3.6 W
Format	DV Format (SD mode)
Signal format	PAL Standard
Video signal recording format	Digital Component Recording
Cassette	Mini DV Cassette
Tape Speed	**SP** : 18.8 mm/s **LP** : 12.5 mm/s
Maximum recording time	**SP** : 60 min. **LP** : 90 min. (using M-DV60ME cassette)
Pickup	1/4" CCD
Lens	F 1.6, f = 3.9 to 62.4 mm, 16:1 Power Zoom Lens
Filter diameter	ø40.5 mm
LCD monitor	
GR-DVL45	3.5" diagonally measured, LCD panel/TFT active matrix system
GR-DVL25	2.5" diagonally measured, LCD panel/TFT active matrix system
Viewfinder	
GR-DVL45	Electronic viewfinder with 0.55" colour LCD
GR-DVL25	Electronic viewfinder with 0.24" black/white LCD
Speaker	Monaural
Operating temperature	0°C to 40°C
Operating humidity	35% to 80%
Storage temperature	–20°C to 50°C
Dimensions	188 (W) x 118 (H) x 88 (D) mm (with the LCD monitor closed and the viewfinder pushed down)
Weight	
GR-DVL45	Approx. 700 g
GR-DVL25	Approx. 690 g

Connectors

S-Video	**Y** : 1 Vp-p, 75 Ω, analogue output **C** : 0.29 Vp-p, 75 Ω, analogue output
JLIP	ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
PC	ø2.5 mm, 3-pole
Video output	1 Vp-p, 75 Ω unbalanced, analogue output
Audio output	–8 dBs, 1 kΩ analogue output, stereo
DV input/output	4-pin, IEEE1394 compliant

AC Power Adapter/Charger AA-V20A

Power requirement	AC 110 V to 240 V∿, 50/60 Hz
Power consumption	23 W
Output	
Charge	DC 7.2 V ⎓, 0.77 A
VTR	DC 6.3 V ⎓, 1.8 A
Dimensions	68 (W) x 38 (H) x 110 (D) mm
Weight	
AA-V20A	Approx. 255 g

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

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No. 86518
August 1999

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5. PARTS LIST

5.1 PACKING ASSEMBLY <M1> 5-1

The following table indicate main different points between models GR-DVL20EG, DVL25A, DVL40EG and GR-DVL45A.

ITEM \ MODEL	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
AC POWER ADAPTER	AA-V20EG	AA-V20A	AA-V20EG	AA-V20A
DC LIGHT	Not used	←	Used	←
VIEWFINDER	Black/White	←	Color	←
LCD MONITOR	2.5 inch	←	3.5 inch	←
ZOOM	160X	450X	160X	450X
CONVERSION PLUG	Optional	Provided	Optional	Provided
CONNECTOR, CABLE ADAPTER	Provided	Optional	Provided	Optional
PC CONNECTION CABLE	Optional	←	←	Provided
DV INPUT/OUTPUT	Output only	Input/Output	Output only	Input/Output
BATT. PACK ASSY	BN-V207U	←	←	BN-V214U

Note: Mark ← is same as left.

The following table indicate different parts number between models GR-DVL20EG, DVL25A, DVL40EG and GR-DVL45A.

PACKING ASSEMBLY<M1>

REF. NO.	ITEM \ MODEL	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
2	PACKING CASE	LY31378-001A	LY31379-005A	LY31378-003A	LY31378-009B
⚠ 5	INST. BOOK (EN)	LYT0431-001A	LYT0445-001A	LYT0431-001A	LYT0445-001A
⚠	INST. BOOK (GE)	LYT0431-002A	–	LYT0431-002A	–
⚠	INST. BOOK (FR)	LYT0431-003A	–	LYT0431-003A	–
⚠	INST. BOOK (DU)	LYT0431-004A	–	LYT0431-004A	–
⚠	INST. BOOK (SP)	LYT0431-005A	–	LYT0431-005A	–
⚠	INST. BOOK (IT)	LYT0431-006A	–	LYT0431-006A	–
⚠	INST. BOOK (DA)	LYT0431-007A	–	LYT0431-007A	–
⚠	INST. BOOK (FI)	LYT0431-008A	–	LYT0431-008A	–
⚠	INST. BOOK (SW)	LYT0431-009A	–	LYT0431-009A	–
⚠	INST. BOOK (NO)	LYT0431-010A	–	LYT0431-010A	–
⚠	INST. BOOK (RU)	LYT0431-011A	LYT0445-003A	LYT0431-011A	LYT0445-003A
⚠	INST. BOOK (CZ)	LYT0431-012A	–	LYT0431-012A	–
⚠	INST. BOOK (PO)	LYT0431-013A	–	LYT0431-013A	–
⚠	INST. BOOK (HU)	LYT0431-014A	–	LYT0431-014A	–
⚠	INST. BOOK (CH)	–	LYT0445-002A	–	LYT0445-002A
⚠	INST. BOOK (AR)	–	LYT0445-004A	–	LYT0445-004A
8	WARRANTY CARD	BT-54013-1	–	BT-54013-1	–
⚠ 10	BATT. PACK ASSY	LY31267-002A	←	←	LY31267-001A
17	CONNECTOR, CABLE ADAPTER	PEMC1000-01-02	–	PEMC1000-01-02	–
22	REMOTE CONTROLLER	YQ20922M	YQ20922Q	YQ20922M	YQ20922Q

Note: Mark – is not used. Mark ← is same as left.

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
24	CABLE ASSY, EDITING CABLE	PEAC0428-150	←	←	QAM0214-001
25	CAUTION SHEET	–	YU42117	–	YU42117
26	ACC. LEAFLET	–	LYT0162-018A	–	LYT0162-018A
⚠ 27	CONVERSION PLUG	–	PEMC1012-02	–	PEMC1012-02
28	CD ROM ASSY	–	–	–	LY31133-005D
29	PC CONNECTION CABLE	–	–	–	QAM0084-001
30	POLY BAG	–	LY30023-012A	–	LY30023-012A
⚠ 31	INST. BOOK (SOFT. SETUP)	–	–	–	LYT0460-001A
32	INST. BOOK (SOFT. OPE. EN)	–	–	–	LYT0432-002A
33	SHEET (AGREEMENT)	–	–	–	LYT0378-003A

FINAL ASSEMBLY <M2>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
107	TOP COVER	LY20461-004A	LY20461-013A	LY20461-006A	LY20461-014A
110	UPPER CASE (1)	LY10177-001A	LY10177-002A	←	←
112	UPPER CASE (2) ASSY	LY20510-001A	LY20510-002A	←	←
119	DC LIGHT ASSY	–	–	LY30860-001B	←
119A	LAMP	–	–	YQ44266	←
⚠120	FRONT COVER ASSY	LY10178-003A	LY10178-008A	LY10178-004A	LY10178-006A
120A	HOOD (1)	LY31220-001B	LY31220-002A	←	←
120B	HOOD (2)	LY31221-002A	LY31221-005A	LY31221-003A	LY31221-005A
120F	COVER (LIGHT)	LY30934-008A	LY30934-010A	–	–
124	MICROPHONE	LY30861-006A	LY30861-007A	←	←
138	PLATE	LY41609-003B	LY41609-001B	LY41609-003B	LY41609-001B
⚠140	FRAME ASSY	LY10180-002B	←	LY10180-001B	←
140C	CONTACT (LIGHT), X2	–	–	YQ43810-1-1	←
140D	E-SI C WIRE C-F	–	–	WJM0003-004A	←
168	SHEET	LY41672-001A	LY41672-002B	←	←

ELECTRONIC VIEWFINDER ASSEMBLY <M4>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
⚠304	VF CASE (U) ASSY	LY31265-001A	LY31265-002A	–	–
⚠319	E VF ASSY	LYH20094-003B	LYH20094-004B	–	–
⚠368	E VF ASSY	–	–	LYH20094-005A	←

MONITOR ASSEMBLY <M5>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
⚠501	M. COVER ASSY	LY20467-002A	LY20467-003A	←	←
514	HINGE COVER (1)	LY31238-001A	LY31238-002A	←	←
⚠523	MONITOR ASSY	LYH20093-003A	LYH20093-011A	LYH20093-005A	←

Note: Mark – is not used. Mark ← is same as left.

MAIN BOARD ASSEMBLY <01>

REF. NO.	MODEL / ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
PW	MAIN BOARD ASSY	YB10260DD–02	←	YB10260FF–02	←
IC7801	IC (DIGITAL)	–	–	TC7SET02FU	←
IC7802	IC (DIGITAL)	–	–	TC7SET08FU	←
IC7804	IC	NJM2535V	←	–	–
Q6156	TRANSISTOR	2SC4617/QR/–X	←	–	–
Q6201	TRANSISTOR	–	–	2SA1774/QR/–X	←
Q6202	TRANSISTOR	–	–	2SD1628/FG/–X	←
Q6203	TRANSISTOR	–	–	2SC4617/QR/–X	←
Q7801	PAIR TRANSISTOR	–	–	UMZ1N	←
R6167	MG RESISTOR	NRSA63J–222X	←	–	–
R6201	MG RESISTOR	–	–	NRSA63J–103X	←
R6202	MG RESISTOR	–	–	NRSA63J–101X	←
R6203	MG RESISTOR	–	–	NRSA63J–103X	←
R6205	MG RESISTOR	–	–	NRSA63J–184X	←
R6206	MG RESISTOR	–	–	NRSA63J–102X	←
R7801	MG RESISTOR	–	–	NRSA63J–101X	←
R7802	MG RESISTOR	–	–	NRSA63J–563X	←
R7803	MG RESISTOR	–	–	NRSA63J–101X	←
R7804	MG RESISTOR	–	–	NRSA63J–101X	←
R7812	CMF RESISTOR	–	–	NRVA63D–153X	←
R7813	MG RESISTOR	–	–	NRSA63J–224X	←
R7814	MG RESISTOR	–	–	NRSA63J–224X	←
R7815	MG RESISTOR	–	–	NRSA63J–393X	←
R7816	MG RESISTOR	–	–	NRSA63J–0R0X	←
R7817	MG RESISTOR	NRSA63J–103X	←	–	–
R7818	MG RESISTOR	NRSA63J–562X	←	–	–
R7819	MG RESISTOR	NRSA63J–103X	←	–	–
R7820	MG RESISTOR	NRSA63J–822X	←	–	–
C6161	CAPACITOR	NCB21CK–105X	←	–	–
C6201	T CAPACITOR	–	–	NBE20JM–106X	←
C7801	CAPACITOR	–	–	NCF31CZ–104X	←
C7802	CAPACITOR	–	–	NCF31CZ–104X	←
C7803	CAPACITOR	–	–	NCB31HK–102X	←
C7810	CAPACITOR	–	–	NCF21CZ–105X	←
C7811	CAPACITOR	–	–	NCF21CZ–105X	←
C7812	T CAPACITOR	–	–	NBE21AM–106X	←
C7814	CAPACITOR	NCB21AK–105X	←	–	–
C7815	T CAPACITOR	NBE20JM–106X	←	–	–
CN104	FPC CONNECTOR	QGF0507F1–10X	←	QGF0507F1–20X	←
CN108	CONNECTOR	–	–	QGA1201F2–02X	←

Note: Mark – is not used. Mark ← is same as left.

VF BL BOARD ASSEMBLY <06>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
PW	VF BL BOARD ASSY	–	–	YB20862A	←

MONITOR BOARD ASSEMBLY <07>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
PW	MONITOR BOARD ASSY	YB20860D–01	←	YB20860F–01	←
IC7604	IC	–	–	BU4053BCFV	←
IC7605	IC	–	–	TC4W53F	←
Q7601	TRANSISTOR	–	–	2SC4617/QR/–X	←
Q7602	TRANSISTOR	–	–	DTC144EE	←
Q7603	TRANSISTOR	–	–	DTA144EE	←
Q7604	TRANSISTOR	–	–	DTA114YE	←
Q7605	TRANSISTOR	–	–	DTA114YE	←
Q7606	TRANSISTOR	–	–	DTA114YE	←
Q7616	TRANSISTOR	–	–	DTC144EE	←
Q7617	TRANSISTOR	–	–	DTA114EE	←
Q7618	TRANSISTOR	–	–	DTC144EE	←
D7603	DIODE	–	–	MA111	←
R7601	MG RESISTOR	–	–	NRSA63J–101X	←
R7608	MG RESISTOR	–	–	NRSA63J–100X	←
R7609	MG RESISTOR	–	–	NRSA63J–100X	←
R7617	MG RESISTOR	–	–	NRSA63J–102X	←
R7618	MG RESISTOR	NRSA63J–0R0X	←	–	–
R7620	MG RESISTOR	–	–	NRSA63J–102X	←
R7632	MG RESISTOR	NRSA63J–101X	←	–	–
R7633	MG RESISTOR	NRSA63J–101X	←	–	–
R7634	MG RESISTOR	NRSA63J–101X	←	–	–
R7635	MG RESISTOR	–	–	NRSA63J–220X	←
R7636	MG RESISTOR	–	–	NRSA63J–220X	←
R7637	CMF RESISTOR	–	–	NRVA63D–123X	←
R7638	CMF RESISTOR	–	–	NRVA63D–123X	←
R7639	CMF RESISTOR	–	–	NRVA63D–123X	←
R7640	CMF RESISTOR	–	–	NRVA63D–123X	←
R7641	CMF RESISTOR	–	–	NRVA63D–123X	←
R7642	CMF RESISTOR	–	–	NRVA63D–123X	←
R7643	MG RESISTOR	–	–	NRSA63J–220X	←
R7645	MG RESISTOR	–	–	NRSA63J–473X	←
R7646	MG RESISTOR	–	–	NRSA63J–103X	←
R7664	MG RESISTOR	NRSA63J–682X	←	NRSA63J–332X	←
R7665	MG RESISTOR	NRSA63J–821X	←	NRSA63J–333X	←
R7666	MG RESISTOR	NRSA63J–332X	←	NRSA63J–223X	←
R7672	MG RESISTOR	NRSA63J–0R0X	←	–	–
R7673	MG RESISTOR	–	–	NRSA63J–223X	←
R7674	MG RESISTOR	–	–	NRSA63J–333X	←

Note: Mark – is not used. Mark ← is same as left.

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
R7675	MG RESISTOR	NRSA63J–103X	←	–	–
R7677	MG RESISTOR	–	–	NRSA63J–223X	←
R7678	MG RESISTOR	–	–	NRSA63J–223X	←
R7679	MG RESISTOR	–	–	NRSA63J–822X	←
R7681	MG RESISTOR	NRSA63J–0R0X	←	NRSA63J–331X	←
R7685	MG RESISTOR	–	–	NRSA63J–392X	←
C7501	CAPACITOR	NCZ1016–150X	←	NCZ1016–180X	←
C7502	CAPACITOR	NCZ1016–150X	←	NCZ1016–180X	←
C7626	CAPACITOR	–	–	NDC31HJ–390X	←
C7639	CAPACITOR	–	–	NCF31CZ–104X	←
C7648	CAPACITOR	–	–	NCF31CZ–104X	←
C7649	CAPACITOR	–	–	NCF31CZ–104X	←
C7655	CAPACITOR	–	–	NCB31CK–104X	←
L7606	COIL	–	–	NQL184J–470X	←
L7608	COIL	–	–	NQL144K–220X	←
L7611	COIL	NQL144K–220X	←	–	–
OT4	SPACER–A	LY30016–0W1A	←	–	–

OPE. COVER UNIT <09>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
PW	OPE. COVER UNIT	LY10176-002C	LY10176-005B	LY10176-003C	←

B/W VF BOARD ASSEMBLY <10>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
PW	B/W VF BOARD ASSY	YB20861B-02	←	–	–

SECTION 6 AC POWER ADAPTER

CABINET ASSEMBLY <MA>

REF. NO.	MODEL ITEM	GR-DVL20EG	GR-DVL25A	GR-DVL40EG	GR-DVL45A
⚠ 3	AC POWER CORD	YQ10531-006	PTY20290-020	YQ10531-006	PTY20290-020

Note: Mark – is not used. Mark ← is same as left.

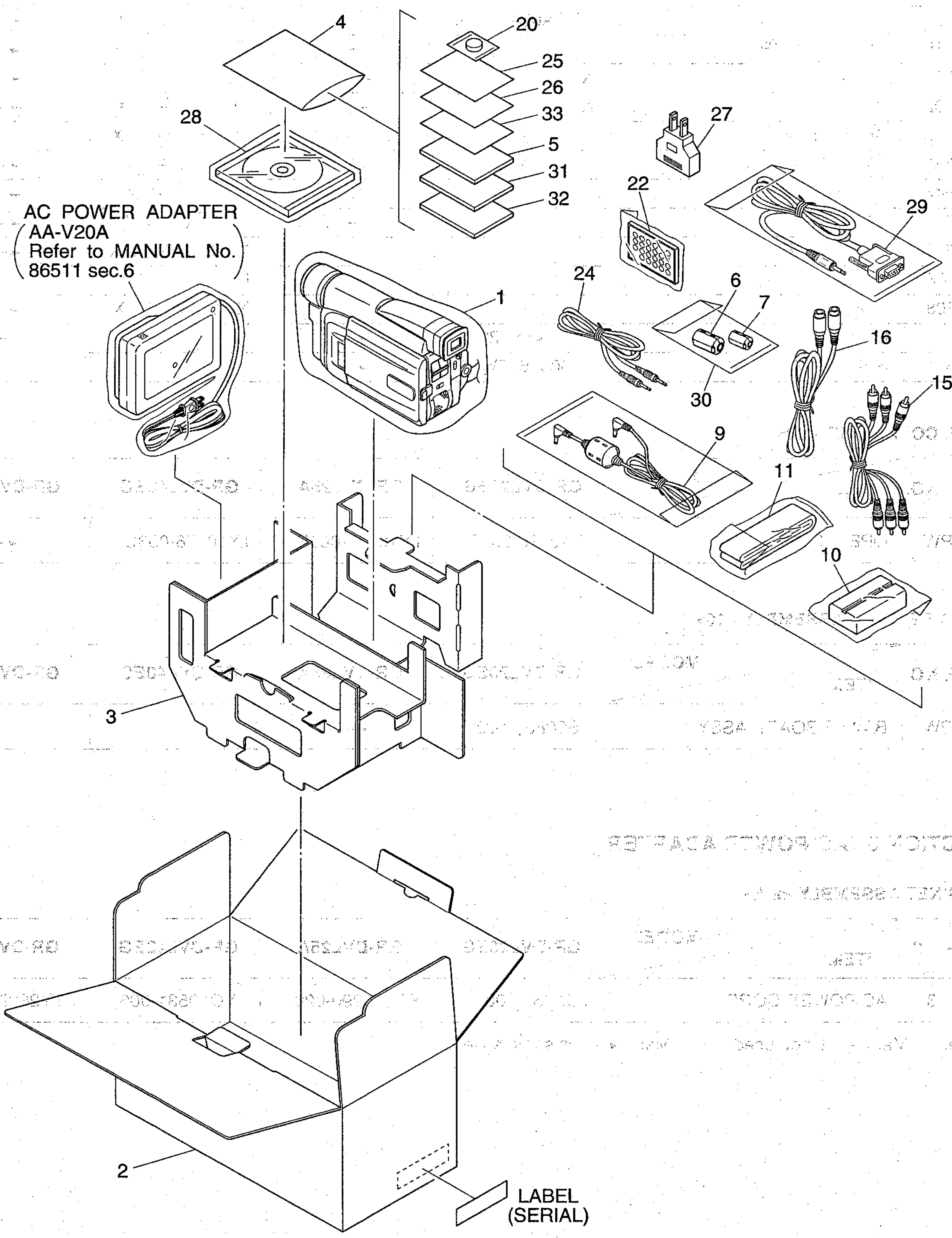
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.


4
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AC POWER ADAPTER
AA-V20A
Refer to MANUAL No.
86511 sec.6
24
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7
1
16
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15
9
11
10
3
2
LABEL
(SERIAL)

⚠ REF No. PART No. PART NAME, DESCRIPTION

****

PACKING ASSEMBLY <M1>

	1	LY30023-015A	POLY BAG
	2	LY31378-009B	PACKING CASE, DVL45A
		LY31379-005A	PACKING CASE, DVL25A
	3	LY31380-001A	CUSHION
	4	QPA02003006	POLY BAG
⚠	5	LYT0445-001A	INST.BOOK(EN)
⚠		LYT0445-002A	INST.BOOK(CH)
⚠		LYT0445-003A	INST.BOOK(RU)
⚠		LYT0445-004A	INST.BOOK(AR)
	6	QQR0919-002	CORE FILTER for DV CABLE
	7	QQR0855-003	CORE FILTER for EDITING CABLE
	9	QAM0170-001	DC CORD
⚠	10	LY31267-001A	BATT.PACK ASSY, DVL45A
⚠		LY31267-002A	BATT.PACK ASSY, DVL25A
	11	LY20186-001A	SHOULDER STRAP
	15	PEAC0359-150	CABLE ASSY, A/V CABLE
	16	QAM0004-003	S CABLE, S-VIDEO CABLE
⚠	20	PECA0903	LI BATTERY
	22	YQ20922Q	REMOTE CONTROLLER
	24	PEAC0428-150	CABLE ASSY, EDITING CABLE,DVL25A
		QAM0214-001	CABLE ASSY, EDITING CABLE,DVL45A
	25	YU42117	CAUTION SHEET
	26	LYT0162-018A	ACC. LEAFLET
⚠	27	PEMC1012-02	CONVERSION PLUG
	28	LY31133-005D	CD ROM ASSY, DVL45A
	29	QAM0084-001	PC CONNECTION CABLE, DVL45A
	30	LY30023-012A	POLY BAG
⚠	31	LYT0460-001A	INST. BOOK (SOFT. SETUP), DVL45A
	32	LYT0432-002A	INST. BOOK (SOFT. OPE. EN), DVL45A
	33	LYT0378-003A	SHEET (AGREEMENT), DVL45A

- INSTRUCTIONS
  EN .... ENGLISH
  CH .... CHINESE
  RU .... RUSSIAN
  AR .... ARABIAN

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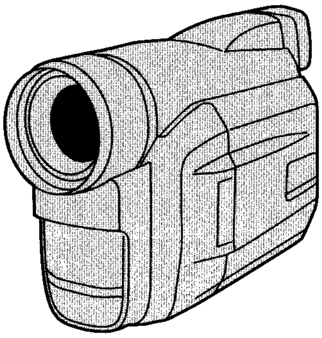
GR-DVL20EG/DVL30EG/DVL40EG



Mini DV PAL

SPECIFICATIONS

Camcorder

General

Power supply	DC 6.3 V⎓ (Using AC Power Adapter/Charger) DC 7.2 V⎓ (Using battery pack)
Power consumption	
LCD monitor off, viewfinder on	
GR-DVL40	Approx. 4.7 W
GR-DVL30/ DVL20	Approx. 4.6 W
LCD monitor on, viewfinder off	
GR-DVL40	Approx. 5.8 W
GR-DVL30	Approx. 5.7 W
GR-DVL20	Approx. 5.6 W
Video light (GR-DVL40/ DVL30 only)	Approx. 3.6 W
Format	DV Format (SD mode)
Signal format	PAL Standard
Video signal recording format	Digital Component Recording
Cassette	Mini DV Cassette
Tape Speed	**SP** : 18.8 mm/s **LP** : 12.5 mm/s
Maximum recording time	**SP** : 60 min. **LP** : 90 min. (using M-DV60ME cassette)
Pickup	1/4" CCD
Lens	F 1.6, f = 3.9 to 62.4 mm, 16:1 Power Zoom Lens
Filter diameter	ø40.5 mm
LCD monitor	
GR-DVL40	3.5" diagonally measured, LCD panel/TFT active matrix system
GR-DVL30	3.0" diagonally measured, LCD panel/TFT active matrix system
GR-DVL20	2.5" diagonally measured, LCD panel/TFT active matrix system
Viewfinder	
GR-DVL40	Electronic viewfinder with 0.55" colour LCD
GR-DVL30/ DVL20	Electronic viewfinder with 0.24" black/white LCD
Speaker	Monaural
Operating temperature	0°C to 40°C
Operating humidity	35% to 80%
Storage temperature	–20°C to 50°C
Dimensions	188 (W) x 118 (H) x 88 (D) mm (with the LCD monitor closed and the viewfinder pushed down)
Weight	
GR-DVL40/ DVL30	Approx. 700 g
GR-DVL20	Approx. 690 g

Connectors

S-Video	**Y** : 1 Vp-p, 75 Ω, analogue output **C** : 0.29 Vp-p, 75 Ω, analogue output
JLIP	ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
PC	ø2.5 mm, 3-pole
Video output	1 Vp-p, 75 Ω unbalanced, analogue output
Audio output	–8 dBs, 1 kΩ analogue output, stereo
DV output	4-pin, IEEE1394 compliant

AC Power Adapter/Charger

Power requirement	AC 110 V to 240 V∿, 50/60 Hz
Power consumption	23 W
Output	
Charge	DC 7.2 V⎓, 0.63 A
VTR	DC 6.3 V⎓, 1.8 A
Dimensions	68 (W) x 38 (H) x 110 (D) mm
Weight	
AA-V20EG	Approx. 255 g

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

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The following table lists the differing points between Models GR-DVL20EG, GR-DVL30EG and GR-DVL40EG in this series.

	GR-DVL20EG	GR-DVL30EG	GR-DVL40EG
BODY COLOR	GUN METALLIC	SILVER	SILVER
WEIGHT	690g	700g	700g
VIEW FINDER	B/W	B/W	COLOR
BUILT IN VIDEO AUTO LIGHT	NOT USED	USED	USED
LCD MONITOR	2.5inch	3inch	3.5inch

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

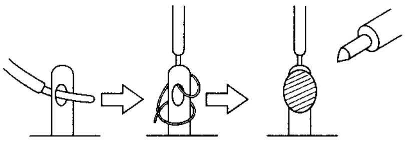


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

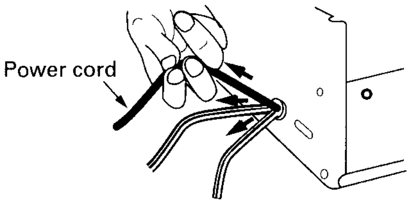


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

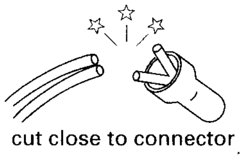


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

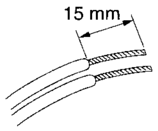


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

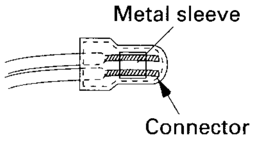


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

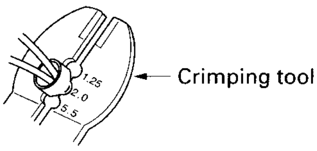


Fig.6

(5) Check the four points noted in Fig.7.

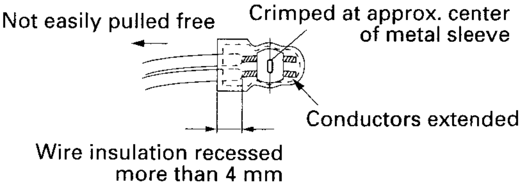

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

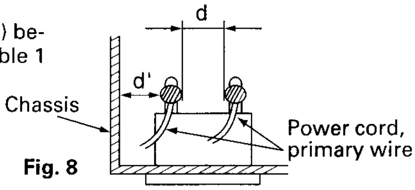


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method : (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

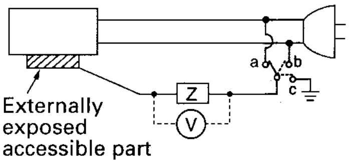


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

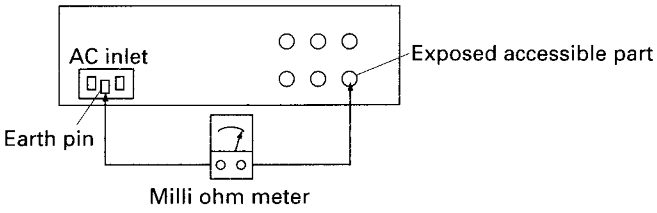


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class 2) AC 1.5 kV 1 minute (Class 1)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

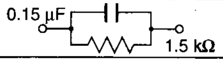
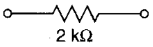
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	 0.15 µF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	 2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Dear Customer,
Thank you for purchasing this digital video camera. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of this product.

Using This Instruction Manual

- All major sections and subsections are listed in the Table Of Contents on the cover page.
- Notes appear after most subsections. Be sure to read these as well.
- Basic and advanced features/operation are separated for easier reference.

It is recommended that you . . .

.... refer to the Index (☞ pgs. 58 – 62) and familiarize yourself with button locations, etc. before use.

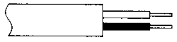
.... read thoroughly the Safety Precautions. They contain extremely important information regarding the safe use of this product.

You are recommended to carefully read the cautions on pages 55 through 57 before use.

SAFETY PRECAUTIONS

IMPORTANT (for owners in the U.K.)

Connection to the mains supply in the United Kingdom.
DO NOT cut off the mains plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.
BE SURE to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover.
If nonetheless the mains plug is cut off be sure to remove the fuse and dispose of the plug immediately, to avoid possible shock hazard by inadvertent connection to the mains supply.
If this product is not supplied fitted with a mains plug then follow the instructions given below:
DO NOT make any connection to the Larger Terminal coded E or Green.
The wires in the mains lead are coloured in accordance with the following code:



If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a competent electrician.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

Warning on lithium cell battery
(for remote control unit)

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace the battery with Maxell, Panasonic (Matsushita Electric), Sanyo or Sony CR2025; use of another battery may present a risk of fire or explosion.

- ■ Dispose of used battery promptly.
- ■ Keep away from children.
- ■ Do not disassemble and do not dispose of in fire.

CAUTIONS:

- ■ To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- ■ When you are not using the AC Power Adapter/Charger for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

NOTES:

- *The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.*
- *The rating plate (serial number plate) of the AC Power Adapter/Charger is on its bottom.*

This camcorder is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording and LCD monitor/viewfinder playback are possible anywhere. Use the BN-V207U/V214U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

SOME DO'S AND DON'TS ON THE SAFE USE OF EQUIPMENT

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO read the operating instructions before you attempt to use the equipment.

DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

DO consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.

DO be careful with glass panels or doors on equipment.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off, withdraw the mains plug and consult your dealer.

DON'T remove any fixed cover as this may expose dangerous voltages.

DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.

DON'T use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.

DON'T listen to headphones at high volume, as such use can permanently damage your hearing.

DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.

DON'T use makeshift stands and NEVER fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

DON'T allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL

— NEVER let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock;

— NEVER guess or take chances with electrical equipment of any kind — it is better to be safe than sorry!

SAFETY PRECAUTIONS

Do not point the lens or the viewfinder directly into the sun. This can cause eye injuries, as well as lead to the malfunctioning of internal circuitry. There is also a risk of fire or electric shock.

CAUTION!
The following notes concern possible physical damage to the camcorder and to the user.

When carrying, be sure to always securely attach and use the provided shoulder strap. Carrying or holding the camcorder by the viewfinder and/or the LCD monitor can result in dropping the unit, or in a malfunction.

Take care not to get your finger caught in the cassette cover. Do not let children operate the camcorder, as they are particularly susceptible to this type of injury.

Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the camcorder.

CAUTION!
Connecting cables (Audio/Video, S-Video, Editing, DC, etc.) to the camcorder and leaving the unit on top of the TV is not recommended, as tripping on the cables will cause the camcorder to fall, resulting in damage.

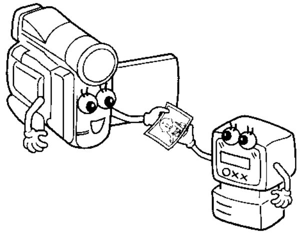
Mini DV PAL

- This camcorder is designed exclusively for the digital video cassette. Only cassettes marked Mini DV can be used with this unit.

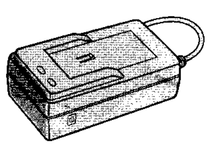
Before recording an important scene . . .
.... make sure you only use cassettes with the Mini DV mark Mini DV.
.... remember that this camcorder is not compatible with other digital video formats.
.... remember that this camcorder is intended for private consumer use only. Any commercial use without proper permission is prohibited. (Even if you record an event such as a show, performance or exhibition for personal enjoyment, it is strongly recommended that you obtain permission beforehand.)

INFORMATION FOR PC USERS

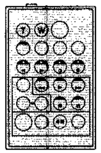
This camcorder can transfer still images to a PC using optional software (such as the HS-V4KIT).



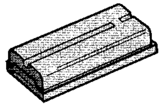
PROVIDED ACCESSORIES



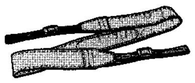
- **AC Power Adapter/ Charger AA-V20EG or AA-V20EK**



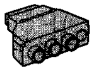
- **Remote Control Unit RM-V711U**



- **Battery Pack BN-V207U**



- **Shoulder Strap**

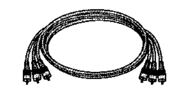


- **Cable Adapter**

- **Lithium Battery CR2025 (for remote control unit)**

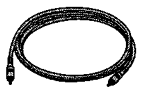
- **Core Filter (for optional DV cable)**

- **Core Filter (for provided editing cable or optional JLIP cable*)**
  * Necessary for use with optional software.

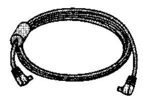


- **Audio/Video (A/V) Cable [RCA plug to RCA plug]**

- **S-Video Cable**



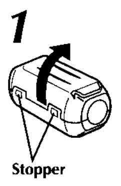
- **Editing Cable**

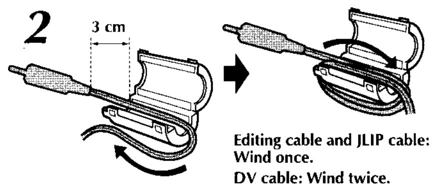


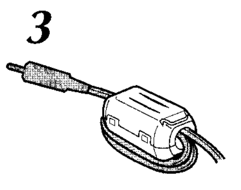
- **DC Cord**

How to Attach The Core Filter

Attach the provided Core Filter to the provided editing cable, optional DV cable or optional JLIP cable. The Core Filter reduces interference.

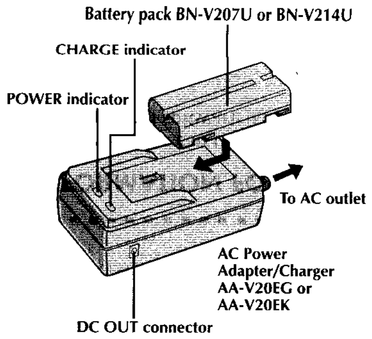






1. Release the stoppers on both ends of the Core Filter.
2. Run the cable through the Core Filter, leaving approx. 3 cm of cable between the cable plug and the Core Filter. Wind the cable around the outside of the Core Filter as shown in the illustration.
   - Wind the cable so that it is not slack.

   NOTE:
   Take care not to damage the cable.
3. Close the Core Filter until it clicks shut.
   Connect the end of the cable with the Core Filter to the camcorder.


Battery pack BN-V207U or BN-V214U
CHARGE indicator
POWER indicator
To AC outlet
AC Power Adapter/Charger AA-V20EG or AA-V20EK
DC OUT connector

Battery pack	Charging time
BN-V207U	approx. 1 hr. 30 min.
BN-V214U (optional)	approx. 3 hrs.

Power

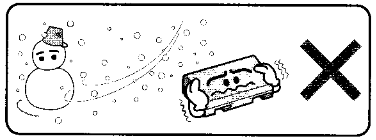
This camcorder's 2-way power supply system lets you choose the most appropriate source of power. Do not use provided power supply units with other equipment.

CHARGING THE BATTERY PACK

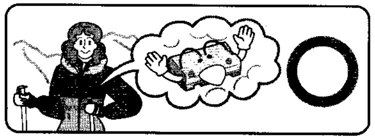
1. Make sure you unplug the camcorder's DC cord from the AC Power Adapter/Charger. Plug the AC Adapter/ Charger's power cord into an AC outlet. The POWER indicator lights.
2. Remove the battery pack's protective cap. Attach the battery pack with its long groove pointing toward the indicator side of the battery pack mount on the AC Power Adapter/Charger. The CHARGE Indicator begins blinking to indicate charging has started.
3. When the CHARGE indicator stops blinking but stays lit, charging is finished.
4. Slide the battery in the opposite direction of the arrow and lift off. Remember to unplug the AC Adapter/ Charger's power cord from the AC outlet.

NOTES:

- *Perform charging where the temperature is between 10° and 35°C. 20° to 25°C is the ideal temperature range for charging. If the environment is too cold, charging may be incomplete.*
- *Charging times noted above are for a fully discharged battery pack.*
- *Charging time varies according to the ambient temperature and the status of the battery pack.*
- *To avoid interference with reception, do not use the AC Power Adapter/Charger near a radio.*
- *If you connect the camcorder's DC cord to the adapter during battery charging, power is supplied to the camcorder and charging stops.*
- *Since the AC Power Adapter/Charger processes electricity internally, it becomes warm during use. Be sure to use it only in well-ventilated areas.*
- *When charging the battery pack for the first time or after a long storage period, the CHARGE indicator may not light. In this case, remove the battery pack from the AC Power Adapter/Charger, then try charging again.*
- *If the battery operation time remains extremely short even after having been fully charged, the battery is worn out and needs to be replaced. Please purchase a new one.*



Lithium-ion is vulnerable in colder temperatures.



About Batteries

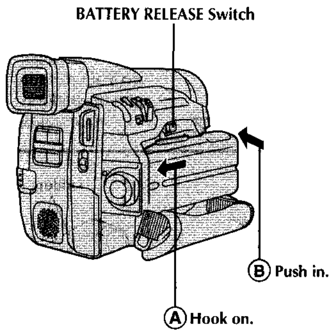
DANGER! Do not attempt to take the batteries apart, or expose them to flame or excessive heat, as it may cause a fire or explosion.

WARNING! Do not allow the battery or its terminals to come in contact with metals, as this can result in a short circuit and possibly start a fire.

The Benefits Of Lithium-Ion Batteries

Lithium-ion battery packs are small but have a large power capacity. However, when one is exposed to cold temperatures (below 10° C), its usage time becomes shorter and it may cease to function. If this happens, place the battery pack in your pocket or other warm, protected place for a short time, then re-attach it to the camcorder. As long as the battery pack itself is not cold, it should not affect performance.

(If you're using a heating pad, make sure the battery pack does not come in direct contact with it.)



ATTENTION:

Before detaching the power source, make sure that the camcorder's power is turned off. Failure to do so can result in a camcorder malfunction.

USING THE BATTERY PACK

1. Hook the non-terminal end of the battery pack to the camcorder Ⓐ and push the battery pack in until it locks in place Ⓑ.
   - If the battery pack is attached in the wrong position, a malfunction may occur.

To Detach The Battery Pack . . .
.... slide **BATTERY RELEASE** and pull out the battery pack.

Approximate recording time

Battery pack	LCD monitor on/ Viewfinder off	LCD monitor off/ Viewfinder on
BN-V207U	50 min. (25 min.)	60 min. (30 min.)
BN-V214U (optional)	1 hr. 55 min. (60 min.)	2 hrs. 20 min. (1 hr. 10 min.)
BN-V856U (optional)	7 hrs. (4 hrs.)	8 hrs. 30 min. (4 hrs. 30 min.)

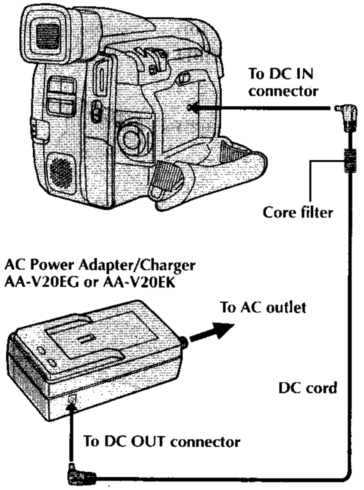
( ) : when the video light is on (GR-DVL40/DVL30 only).

NOTES:

- *Recording time is reduced significantly under the following conditions:*
  - *Zoom or Record-Standby mode is engaged repeatedly.*
  - *The LCD monitor is used repeatedly.*
- *Before extended use, it is recommended that you prepare enough battery packs to cover 3 times the planned shooting time.*

INFORMATION:

VU-V856KIT is a set composed of the BN-V856U battery pack and AA-V80EG or AA-V80EK AC Power Adapter/ Charger.
Read the VU-V856KIT's instruction manuals before using.
It is impossible to charge the BN-V856U battery pack using the provided AC Power Adapter/Charger. Use the optional AA-V80EG or AA-V80EK AC Power Adapter/ Charger.

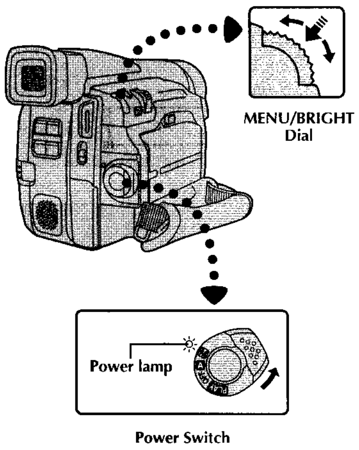


USING AC POWER

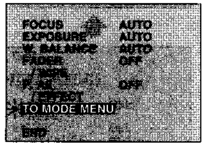
Use the AC Power Adapter/Charger (connect as shown in the illustration).

NOTES:

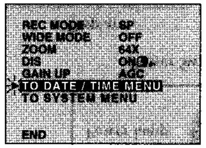
- *The provided AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.*
- *For other notes,* ☞ *pg. 6.*



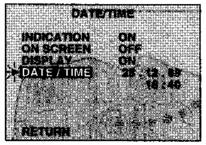
Display



Recording Menu



Mode Menu



Date/Time Menu

Date/Time Settings

The date/time is recorded onto the tape at all times, but its display can be turned on or off during playback (☞ pg. 31).

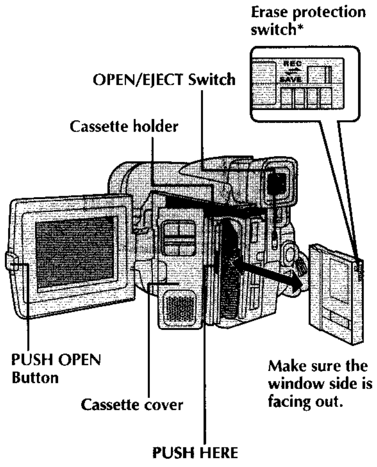
1. Set the Power Switch to "Ⓜ". The power lamp lights and the camcorder is turned on.
2. Press **MENU/BRIGHT**. The Recording Menu appears.
3. Move the highlight bar to "TO MODE MENU" by rotating **MENU/BRIGHT**. Press it and the Mode Menu appears.
4. Move the highlight bar to "TO DATE/TIME MENU" by rotating **MENU/BRIGHT**. Press it and the Date/Time Menu appears.
5. Move the highlight bar to "DATE/TIME" by rotating **MENU/BRIGHT**. Press it and "day" is highlighted and begins blinking.
   Rotating **MENU/BRIGHT**, input the day. Press it.
   Repeat to input the month, year, hour and minute.
   Press **MENU/BRIGHT** twice when the highlight bar is set to "RETURN" to exit.

Built-in Clock's Rechargeable Lithium Battery

To store the date/time in memory, the clock's rechargeable lithium battery is integrated in the camcorder. While the camcorder is connected to an AC outlet using the AC Power Adapter/Charger, or while the battery pack attached to the camcorder continues to supply power, the clock's rechargeable lithium battery is always charged. However, if the camcorder is not used for approx. 3 months, the clock's lithium battery will become discharged and the date/time stored in memory will be lost. When this occurs, first connect the camcorder to an AC outlet using the AC Power Adapter/Charger for over 24 hours to charge the clock's rechargeable lithium battery. Then perform the date/time setting before using the camcorder.
Note that the camcorder can be used without setting the date/time.

NOTE:

Even if you select "DATE/TIME", if the parameter is not highlighted the camcorder's internal clock continues to operate. Once you move the highlight bar to the first date/time parameter (day), the clock stops. When you finish setting the minute and press ***MENU/BRIGHT****, the date and time begin operation from the date and time you just set.*



**** To Protect Valuable Recordings . . .***

.... slide the erase protection switch on the back of the tape in the direction of "SAVE". This prevents the tape from being recorded over. To record on this tape, slide the switch back to "REC" before loading it.

Loading/Unloading A Cassette

The camcorder needs to be powered up to load or eject a cassette.

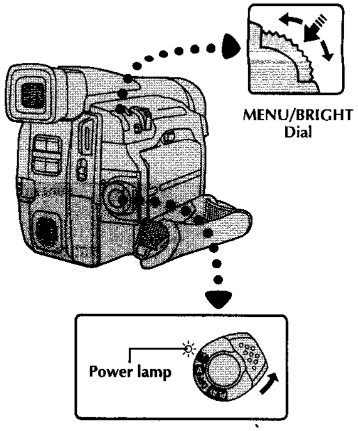
1. Press **PUSH OPEN** and open the LCD monitor.
2. Slide **OPEN/EJECT** in the direction of the arrow then swing the cover open until it locks. The holder opens automatically.
   - Do not touch internal components.
3. Insert or remove a tape and press "PUSH HERE" to close the cassette holder.
   - Once the cassette holder is closed, it recedes automatically. Wait until it recedes completely before closing the cassette cover.
   - When the battery's charge is low, you may not be able to close the cover. Do not apply force. Replace the battery with a fully charged one before continuing.
4. Close the cassette cover firmly until it locks into place. Close the LCD monitor.

Approximate recording time

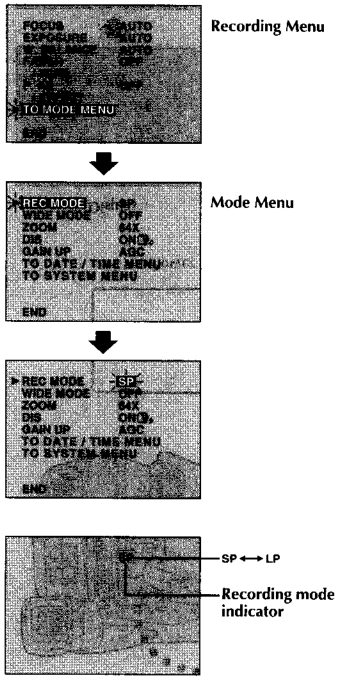
Tape	Recording mode	
	SP	LP
DVM-30	30 min.	45 min.
DVM-60	60 min.	90 min.

NOTES:

- *It takes a few seconds for the cassette holder to open. Do not apply force.*
- *If you wait a few seconds and the cassette holder does not open, close the cassette cover and try again. If the cassette holder still does not open, turn the camcorder off then on again.*
- *If the tape does not load properly, open the cassette cover fully and remove the cassette. A few minutes later, insert it again.*
- *When the camcorder is suddenly moved from a cold place to a warm environment, wait a short time before opening the cover.*
- *Closing the cassette cover before the cassette holder comes out may cause damage to the camcorder.*
- *Even when the camcorder is switched off, a cassette can be loaded or unloaded. After the cassette holder is closed with the camcorder switched off, however, it may not recede. It is recommended to turn the power on before loading or unloading.*
- *When resuming recording after opening the cassette cover, a blank portion will be recorded on the tape or a previously recorded scene will be erased (recorded over) regardless of whether the cassette holder came out or not. See page 16 for information about recording from the middle of a tape.*


MENU/BRIGHT
Dial
Power lamp
Power Switch

Display


FOCUS AUTO
EXPOSURE AUTO
TO MODE MENU
END
Recording Menu
REC MODE SP
WIDE MODE OFF
ZOOM 64X
DIS ON
GAIN UP AGC
TO DATE / TIME MENU
TO SYSTEM MENU
END
Mode Menu
REC MODE SP
WIDE MODE OFF
ZOOM 64X
DIS ON
GAIN UP AGC
TO DATE / TIME MENU
TO SYSTEM MENU
END
SP ←→ LP
Recording mode
indicator

Recording Mode Setting

Set depending on your preference.

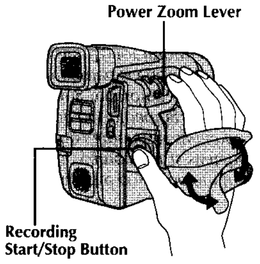
1 Set the Power Switch to "Ⓜ". The power lamp lights and the camcorder is turned on.

2 Press **MENU/BRIGHT**. The Recording Menu appears.

3 Move the highlight bar to "TO MODE MENU" by rotating **MENU/BRIGHT**. Press it and the Mode Menu appears.

4 First move the highlight bar to "REC MODE" by rotating **MENU/BRIGHT**. Press it and the parameter "SP" or "LP" is highlighted. Select "SP" or "LP" by rotating **MENU/BRIGHT**. Press it twice to exit from the Recording Menu.
- Audio Dubbing is impossible on a tape recorded in the LP mode.
- "LP" (Long Play) is more economical, providing 1.5 times the recording time.

NOTES:
- *If the recording mode is switched during recording, the playback picture will be blurred at the switching point.*
- *It is recommended that tapes recorded in the LP mode on this camcorder be played back on this camcorder.*
- *During playback of a tape recorded on another camcorder, blocks of noise may appear or there may be momentary pauses in the sound.*

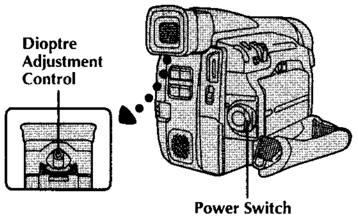

Power Zoom Lever
Recording
Start/Stop Button

Grip Adjustment

1 Separate the Velcro strip.

2 Pass your right hand through the loop and grasp the grip.

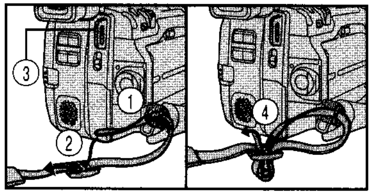
3 Adjust so that your thumb and fingers can easily operate the Recording Start/Stop Button and the Power Zoom Lever. Refasten the Velcro strip.


Dioptre
Adjustment
Control
Power Switch

Viewfinder Adjustment

1 Set the Power Switch to "Ⓐ" or "Ⓜ".
The power lamp comes on and the camcorder is turned on.

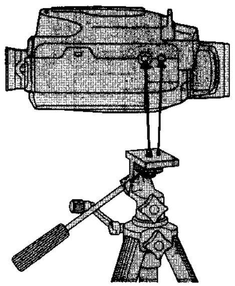
2 Slide the Dioptre Adjustment Control until the indications in the viewfinder are clearly focused.



Shoulder Strap Attachment

1 Following the illustration, thread the strap through the eyelet ①, then fold it back and thread it through the buckle ②. Repeat the procedure to attach the other end of the strap to the other eyelet ③, making sure the strap is not twisted.

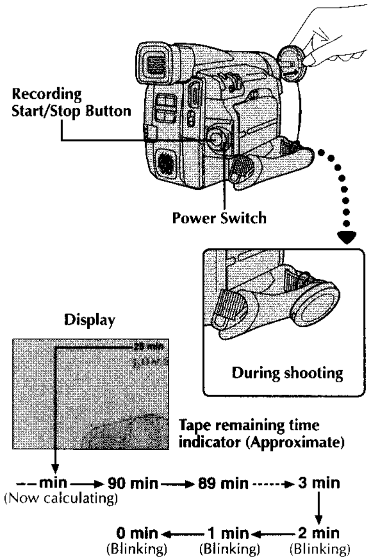
2 Adjust as shown in the illustration ④.



Tripod Mounting

1 Align the screw and camera direction stud on the tripod with the camera's mounting socket and stud hole. Then tighten the screw.

CAUTION:
When using a tripod, be sure to open and extend its legs fully to stabilise the camcorder. To prevent damage to the unit caused by falling over, do not use a small-sized tripod.


Recording Start/Stop Button
Power Switch
During shooting
Display
Tape remaining time indicator (Approximate)
-- min → 90 min → 89 min ----→ 3 min
(Now calculating)
0 min ← 1 min ← 2 min
(Blinking) (Blinking) (Blinking)

Shooting While Watching The Viewfinder

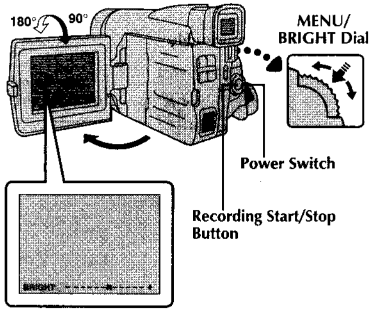
NOTE:
You should already have performed the procedures listed below. If not, do so before continuing.

- *Power (☞ pg. 6)*
- *Load A Cassette (☞ pg. 9)*
- *Recording Mode Setting (☞ pg. 10)*
- *Grip Adjustment (☞ pg. 11)*
- *Viewfinder Adjustment (☞ pg. 11)*

1 Make sure the LCD monitor is closed and locked. Press in the tabs on the lens cap to remove it, then set the Power Switch to " **A** " or " **M** ". The power lamp lights and the camcorder enters the Record-Standby mode. "PAUSE" is displayed in the viewfinder.

2 Press the Recording Start/Stop Button. " REC ▶▶▶ " appears in the viewfinder while recording is in progress.

3 Press the Recording Start/Stop Button again to stop recording. The camcorder re-enters the Record-Standby mode.



To Adjust The Brightness Of The Display
.... rotate **MENU/BRIGHT** until the brightness indicator on the display moves and the appropriate brightness is reached.

- *If you are using the GR-DVL40, it is also possible to adjust the brightness of the viewfinder.*

Shooting While Watching The LCD Monitor

Before the following steps, perform the procedures listed in the above note.

1 Make sure the LCD monitor is fully open. Press in the tabs on the lens cap to remove it, then set the Power Switch to " **A** " or " **M** ". The power lamp lights and the camcorder enters the Record-Standby mode. "PAUSE" is displayed in the LCD monitor.

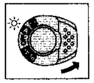
2 Tilt the LCD monitor upward/downward for best viewability and press the Recording Start/Stop Button. " REC ▶▶▶ " appears in the LCD monitor while recording is in progress.

3 Press the Recording Start/Stop Button again to stop recording. The camcorder re-enters the Record-Standby mode.

NOTE:
When you use the LCD monitor outdoors in direct sunlight, the LCD monitor may be difficult to see. If this happens, use the viewfinder instead.

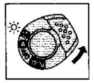
Power Switch Position

A (Full Auto mode):



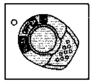
Suitable for standard recording using NO special effects or manual adjustments. When set to this mode, "F.AUTO" appears.

M (Manual mode):



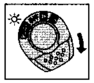
Allows you to set recording functions using the menus for more creative capabilities. When set to this mode, "MANUAL" appears.

OFF:



Switches off the camcorder. Setting to this position resets Manual Focus and Exposure Control to "AUTO".

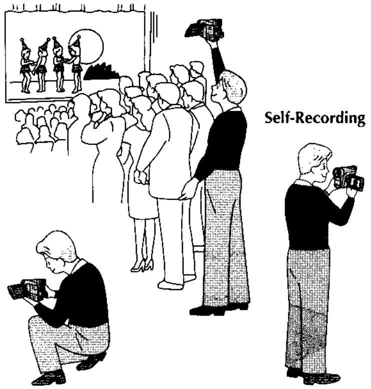
PLAY:



Allows you to play back your recordings.

NOTES:

- *The image will not appear simultaneously in the LCD monitor and the viewfinder.*
- *The cassette holder cannot be opened unless a power supply is attached.*
- *There may be a delay after you open the cassette cover until the holder opens. Do not use force.*
- *Once the cassette holder is closed, it recedes automatically. Wait until it recedes completely before closing the cassette cover.*
- *The time required to calculate and display the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette at its end is loaded.*
- *If the Record-Standby mode continues for 5 minutes, the camcorder's power shuts off automatically. To turn the camcorder on again, set the Power Switch to "OFF", then back to " **A** " or " **M** ".*
- *When a blank portion is left between recorded scenes on the tape, the time code is interrupted and errors may occur when editing the tape. To avoid this, refer to "Recording from the middle of a tape" (☞ pg. 16).*
- *Flicker may occur in the viewfinder.*
- *During recording, sound is not heard from the speaker.*

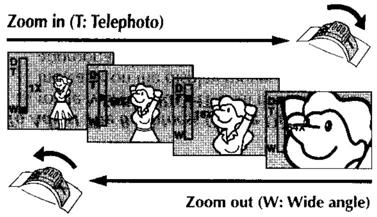


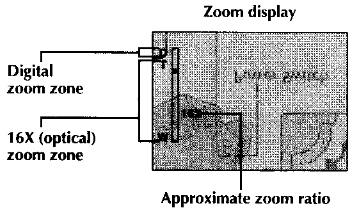
JOURNALISTIC SHOOTING

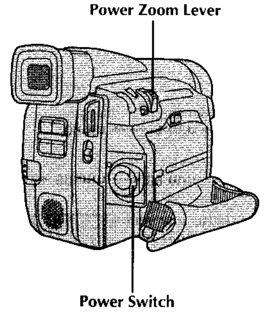
In some situations, different shooting angles may provide more dramatic results. Hold the camcorder in the desired position and tilt the LCD monitor in the most convenient direction. It can rotate 270° (90° downward, 180° upward).

SELF-RECORDING

You can shoot yourself while viewing your own image in the LCD monitor. Open the LCD monitor and tilt it upward 180° so that it faces forward, then point the lens toward yourself and start recording.


Zoom in (T: Telephoto)
Zoom out (W: Wide angle)





FEATURE: Zooming

PURPOSE:

To produce a zoom in/out effect, or an instantaneous change in image magnification.

OPERATION:

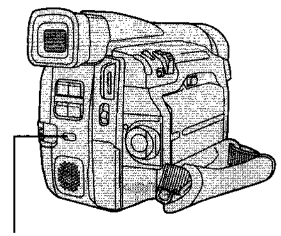
Zoom In
Slide the Power Zoom Lever towards "T".

Zoom Out
Slide the Power Zoom Lever towards "W".

- The harder you slide the Power Zoom Lever, the quicker the zoom action.

NOTES:

- *Focusing may become unstable during Zooming. In this case, set the zoom while in Record-Standby, lock the focus by using the manual focus (☞ pg. 25), then zoom in or out in Record mode.*
- *In Full Auto mode (when the Power Switch is set to "A"), zoom magnification of up to 64X is possible. In Manual mode (when the Power Switch is set to "M"), zooming is possible to a maximum of 160X, or 16X magnification offered by optical zoom.*
- *Zoom magnification of over 16X is done through digital image processing, and is therefore called Digital Zoom.*
- *During Digital Zoom, the quality of the image may suffer.*
- *Digital Zoom cannot be used while functions done through digital image processing (Picture Wipe/Dissolve function, ☞ pg. 22, Video Echo, ☞ pg. 24, etc.) are activated.*
- *Macro shooting (as close as approx. 5 cm to the subject) is possible when the Power Zoom Lever is set all the way to "W". See also "TELE MACRO" in the System Menu on page 20.*



DANGER

- The video light can become extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot for some time.
- When operating, keep a distance of about 30 cm between the video light and people or objects.
- Do not use near flammable or explosive materials.
- It is recommended that you consult your nearest JVC dealer for replacing the video light.

FEATURE: Video Light (GR-DVL40/DVL30 only)

PURPOSE:

To brighten the scene when natural lighting is too dim.

OPERATION:

Set **LIGHT OFF/AUTO/ON** as required:

OFF : Turns off the light.
AUTO : Automatically turns on the light when the camcorder senses insufficient lighting on the subject.
ON : Always keeps the light on as long as the camcorder is turned on.

- The video light can only be used with the camcorder's power on.
- It is recommended to set the white balance (☞ pg. 28) to ☀ when you use the video light.
- When not using the video light, turn it off to save battery power.

NOTES:

- *Even if the battery indicator (▭) does not blink due to low battery charge, the camcorder may turn off automatically when you turn on the video light, or when you start recording with the video light turned on.*
- *When **LIGHT OFF/AUTO/ON** is set to "AUTO":*
  - *Depending on the lighting conditions, the video light may keep turning on and off. In this case, manually switch the light on or off using **LIGHT OFF/AUTO/ON**.*
  - *While the "SHUTTER" mode (☞ pg. 24) is engaged, the light is likely to stay on.*
  - *While the "TWILIGHT" mode (☞ pg. 24) is engaged, the light will not activate.*

NOTE: Recording From The Middle Of A Tape

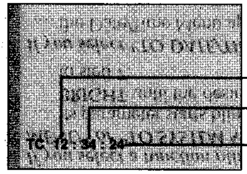
Time Code

During recording, a time code is recorded on the tape. This code is to confirm the location of the recorded scene on the tape during playback.
If recording starts from a blank portion, the time code begins counting from "00:00:00" (minute:second:frame). If recording starts from the end of a previously recorded scene, the time code continues from the last time code number.

To perform Random Assemble Editing (☞ pg. 42 – 47), time code is necessary. If during recording a blank portion is left partway through the tape, the time code is interrupted. When recording is resumed, the time code starts counting up again from "00:00:00". This means the camcorder may record the same time codes as those existing in a previously recorded scene. To prevent this, perform "Recording From The Middle of A Tape" below in the following cases;

- When shooting again after playing back a recorded tape.
- When power shuts off during shooting.
- When a tape is removed and re-inserted during shooting.
- When shooting using a partially recorded tape.
- When shooting on a blank portion located partway through the tape.
- When shooting again after shooting a scene then opening/closing the cassette cover.

Display



Time code is displayed during playback.

Minutes

Seconds

Frames
(25 frames = 1 second)

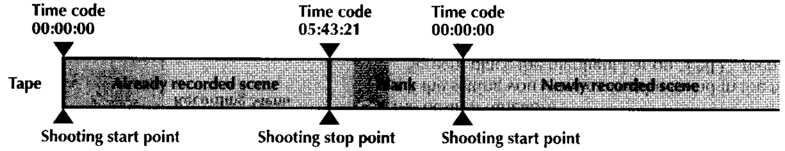
Recording From The Middle Of A Tape

1. Play back a tape to find the spot at which you want to start recording, then engage the Still Playback mode (☞ pg. 29).
2. Set the Power Switch to " A " or " M ", then start recording.

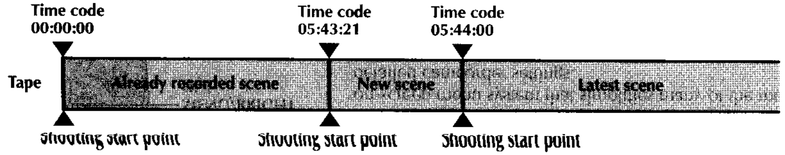
NOTES:

- *The time code cannot be reset.*
- *During fast-forwarding and rewinding, the time code indication does not move smoothly.*

When a blank portion is recorded on a tape


Time code
00:00:00
Time code
05:43:21
Time code
00:00:00
Tape
Already recorded scene
Blank
Newly recorded scene
Shooting start point
Shooting stop point
Shooting start point

Proper recording


Time code
00:00:00
Time code
05:43:21
Time code
05:44:00
Tape
Already recorded scene
New scene
Latest scene
Shooting start point
Shooting start point
Shooting start point

Snapshot

Use your camcorder like a regular camera to take a snapshot, or several of them in succession.

SNAPSHOT MODE SELECTION

1 Set the Power Switch to " A " or " M ".

2 Choose the appropriate Snapshot mode from the 5 available by repeatedly pressing **MODE** until the desired snapshot mode indicator appears.

SNAPSHOT RECORDING

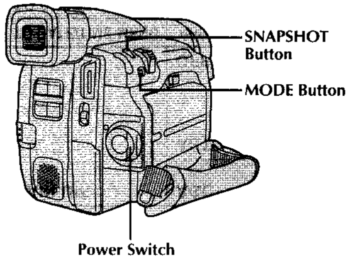
1 Press **SNAPSHOT**.
If you press during Record-Standby . . .
.... "PHOTO" appears and a still image will be recorded for approx. 6 seconds, then the camcorder re-enters the Record-Standby mode.
If you press during Recording . . .
.... "PHOTO" appears and a still image will be recorded for approx. 5 seconds, then normal recording resumes.

Motor Drive Mode

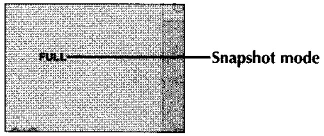
Keeping **SNAPSHOT** pressed provides an effect similar to serial photography. (Interval between still images: approx. 1 second)

NOTES:

- *Even if "MULTI-4" or "MULTI-9" is engaged, Snapshot recording will be performed in the FULL mode during Digital Zoom.*
- *If Snapshot recording is not possible, "PHOTO" blinks when **SNAPSHOT** is pressed.*
- *Even if Programme AE with special effects (☞ pg. 24) is engaged, certain modes of Programme AE with special effects are disabled during Snapshot recording. In such a case, the icon blinks.*
- *During playback as well, all Snapshot modes are available. The shutter sound is not heard.*
- *During Snapshot recording, the image displayed in the viewfinder may be partially missing. However, there is no defect in the recorded image.*


SNAPSHOT
Button
MODE Button
Power Switch

Display


FULL
Snapshot mode

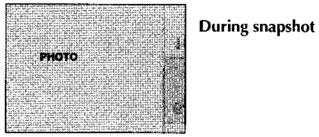
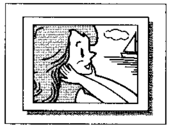
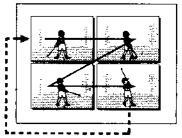


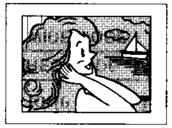
PHOTO
During snapshot



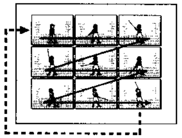
PIN-UP
Pin-Up mode*



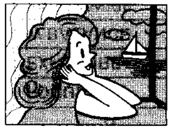
MULTI-4
Multi-Analyser 4



FRAME
Snapshot mode with frame*

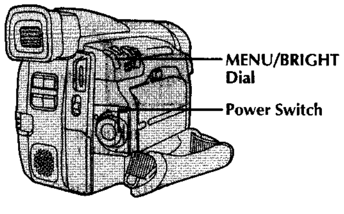


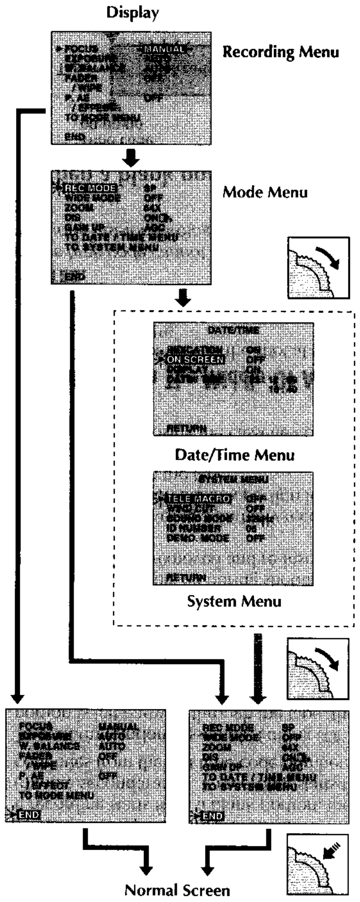
MULTI-9
Multi-Analyser 9



FULL
Snapshot mode with no frame*

* :There is a momentary camera shutter-type blackout together with the sound effect of a shutter closing, which is recorded together with the image.





Using Menus For Detailed Adjustment

This camcorder is equipped with an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings.

1. Set the Power Switch to " M ".

2. Press **MENU/BRIGHT**. The Recording Menu appears.

3. Rotate **MENU/BRIGHT** to move the highlight bar to the desired function.
   - If the setting you want cannot be found in the Menu Screen, place the highlight bar on "END", then go to step **7**.

4. Press **MENU/BRIGHT**. The setting procedure depends on the function you select.

   If you select "FOCUS", "EXPOSURE", "W.BALANCE", "FADER/WIPE" or "P.AE/EFFECT"...
   .... see respective pages (FOCUS: ☞ pg. 25, EXPOSURE: ☞ pg. 26, W.BALANCE: ☞ pg. 28, FADER/WIPE: ☞ pg. 22, P.AE/EFFECT: ☞ pg. 24) and do each procedure from step **4**.

   If you select "TO MODE MENU"...
   .... the Mode Menu appears. Go to step **5**.

5. Rotate **MENU/BRIGHT** to move the highlight bar to the desired function and press it.

   If you select a function other than "TO DATE/TIME MENU" or "TO SYSTEM MENU"...
   .... its parameter starts blinking. Rotate **MENU/ BRIGHT** until the desired parameter appears. Go to step **7**.

   If you select "TO DATE/TIME MENU"...
   .... the Date/Time Menu appears. Go to step **6**.

   If you select "TO SYSTEM MENU"...
   .... the System Menu appears. Go to step **6**.

6. Rotate **MENU/BRIGHT** to move the highlight bar to the desired function, then press it.

   If you select "DATE/TIME"... ☞ pg. 8

   If you select other functions...
   .... rotate **MENU/BRIGHT** until the desired parameter appears, then press it. The highlight bar automatically moves to "RETURN". Go to step 7.

7. Press **MENU/BRIGHT** as many times as necessary to return to the normal screen.

Recording Menu Explanations

FOCUS	Refer to "Focusing" (☞ pg. 25).
EXPOSURE	Refer to "Exposure Control" and "Iris Lock" (☞ pg. 26, 27).
W.BALANCE	Refer to "White Balance Adjustment" and "Manual White Balance Operation" (☞ pg. 28).
FADER/WIPE	Refer to "Fade/Wipe Effects" (☞ pg. 22, 23).
P.AE/EFFECT	Refer to "Programme AE With Special Effects" (☞ pg. 24).
TO MODE MENU	Refer to "Mode Menu Explanations" below.

Mode Menu Explanations

REC MODE	Allows you to set the recording mode (SP or LP) depending on your preference (☞ pg. 10).	
WIDE MODE	**OFF**	Select "OFF" when you want to use neither "SQUEEZE" nor "CINEMA".
	SQUEEZE W	For playback on TVs with an aspect ratio of 16:9. Naturally expands the image to fit the screen without distortion. W appears. When using this mode, refer to your wide-screen TV's instruction manual. During playback/ recording on 4:3 TVs/LCD monitor/viewfinder, the image is elongated vertically.
	CINEMA ▭	Inserts black bands at the top and bottom of the screen. During playback on wide-screen TVs, the black bands at the top and bottom of the screen are cut and the screen ratio becomes 16:9. When using this mode, refer to your wide-screen TV's instruction manual. During playback/recording on 4:3 TVs/ LCD monitor/viewfinder, black bands are inserted at the top and bottom of the screen and the image appears like a letterboxed 16:9 movie.
ZOOM	**16X**	When set to "16X" while using Digital Zoom, the zoom magnification will reset to 16X since Digital Zoom will be disengaged.
	64X	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 16X (the optical zoom limit), to a maximum of 64X digital magnification.
	160X	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 16X (the optical zoom limit), to a maximum of 160X digital magnification.
DIS	**ON ◙**	To compensate for unstable images caused by camera-shake, particularly at high magnification. **NOTES:** ● *Accurate stabilisation may not be possible if hand shake is excessive, or under the following conditions:* • *When shooting subjects with vertical or horizontal stripes.* • *When shooting dark or dim subjects.* • *When shooting subjects with excessive backlighting.* • *When shooting scenes with movement in various directions.* • *When shooting scenes with low-contrast backgrounds.* ● *Switch off the Digital Image Stabiliser (DIS) when recording with the camcorder on a tripod.* ● *The "◙" indicator appears blinking if the Stabiliser cannot be used.*
	OFF	
GAIN UP	**AGC**	This is automatically activated during Full Auto mode. The overall appearance may be grainy, but the image is bright.
	AUTO A☼	The shutter speed is automatically adjusted (1/25 — 1/200 sec.). Shooting a subject in low or poor lighting at 1/25 sec. shutter speed provides a brighter image than in the AGC mode, but the subject's movements are not smooth or natural. When set to this mode, " **A☼** " is displayed.
	OFF	Allows you to shoot dark scenes with no picture brightness adjustment.
TO DATE/TIME MENU	Refer to "Date/Time Menu Explanations" (☞ pg. 20).	
TO SYSTEM MENU	Refer to "System Menu Explanations" (☞ pg. 20).	

▨ : **Factory preset**

CONTINUED ON NEXT PAGE

Date/Time Menu Explanations

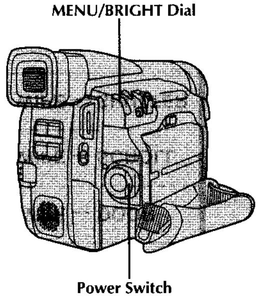
INDICATION	▨ **ON**	Makes all the indications appear in the camcorder (☞ pg. 21).
	OFF	Keeps all the indications (except the tape running indicator, warnings, etc.) from appearing in the camcorder (☞ pg. 21).
ON SCREEN*	▨ **OFF**	Keeps the camcorder's display from appearing on the connected TV screen.
	ON	Makes the camcorder's display appear on screen when the camcorder is connected to a TV.
DISPLAY	▨ **ON**	Makes the date/time settings appear in the camcorder (☞ pg. 21).
	OFF	Keeps the date/time settings from appearing in the camcorder.
DATE/TIME	Allows you to set the current date and time (☞ pg. 8).	

* You can also change "ON SCREEN" to "ON" or "OFF" by pressing the DISPLAY button on the RM-V711U remote control.

System Menu Explanations

TELE MACRO	▨ **OFF**	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance more than 1m to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm. • Depending on the zoom position, the lens may go out of focus.
	ON	
WIND CUT	▨ **OFF**	Disengages the function which cuts down on noise created by wind.
	ON	Helps cut down on noise created by wind. • " ≋ " appears. • The quality of the sound will change. This is normal.
SOUND MODE	▨ **32 kHz**	Enables recording of stereo sound on four separate channels, and is recommended for use when performing audio dubbing.
	48 kHz	Enables recording of stereo sound on two separate channels.
ID NUMBER	This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). The numbers range from 01 to 99. Factory setting is 06.	
DEMO. MODE	▨ **OFF**	Automatic demonstration will not take place.
	ON	Demonstrates certain functions such as Programme AE with special effects, etc., and can be used to confirm how these functions operate. When "DEMO. MODE" is set to "ON" and the Recording Menu is closed, demonstration starts. **NOTES:** • *If a tape is in the camcorder, the demonstration cannot be turned on.* • *By turning off the camcorder, "DEMO. MODE" is set to "OFF" automatically.*

▨ **: Factory preset**



NOTES:
- *The Date/Time is always displayed when the Power Switch is set to "Ⓐ".*
- *Connect the camcorder to a TV and set "ON SCREEN" to "ON" in the Date/Time Menu. The display appears on the connected TV .*
- *Even if "ON SCREEN" is set to "ON", the indications are removed from the TV if "INDICATION" is set to "OFF".*

Date/Time Display During Recording

You should already have set the date and time ("Date/Time Settings", ☞ pg. 8).

1 Set the Power Switch to "Ⓜ".

2 Press **MENU/BRIGHT**. The Recording Menu appears.

3 Move the highlight bar to "TO MODE MENU" by rotating **MENU/BRIGHT**. Press it and the Mode Menu appears.

4 Move the highlight bar to "TO DATE/TIME MENU" by rotating **MENU/BRIGHT**. Press it and the Date/Time Menu appears.

5 Move the highlight bar to "DISPLAY" by rotating **MENU/BRIGHT**, then press it.

6 Move the highlight bar to "ON" or "OFF" by rotating **MENU/BRIGHT**. Press it and the highlight bar automatically moves to "RETURN".

7 Press **MENU/BRIGHT** twice. Selection is complete and the menu disappears.

LCD Monitor/Viewfinder Indications

You can make the LCD monitor/Viewfinder indications appear/disappear.
Before the following steps, perform steps 1 through 4 above.

5 Move the highlight bar to "INDICATION" by rotating **MENU/BRIGHT**, then press it.

6 Rotate **MENU/BRIGHT** to display the desired setting.
OFF : To make the indications disappear.
ON : To make the indications appear.
Then press it and the highlight bar automatically moves to "RETURN".

7 Press **MENU/BRIGHT** twice. Selection is complete and the menu disappears.

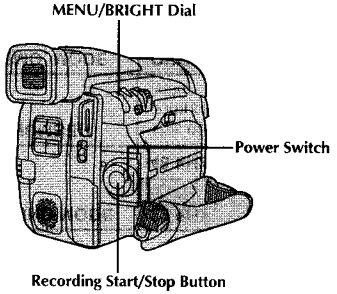
NOTES:
- *It is impossible to make the tape running indicator "▶▶▶", warnings, etc. disappear from the LCD monitor or the viewfinder. For indications that can be removed, ☞ pg. 60.*
- *If "INDICATION" is set in the Date/Time Menu, "INDICATION" in the Playback Menu will also be set to the same setting (☞ pg. 31).*

Fade/Wipe Effects

These effects let you make pro-style scene transitions. Use them to spice up the transition from one scene to the next. You can also vary transitions from scene to scene.

IMPORTANT:

Some Fade/Wipe Effects cannot be used with certain modes of Programme AE with special effects (☞ pg. 24). If an unusable Fade/Wipe Effect is selected, its indicator blinks.



NOTES:

- *You can extend the length of a Fade or Wipe by pressing and holding the Recording Start/Stop Button.*
- *If the power is turned off after a scene is finished recording, the stored point is erased, disabling the Picture Wipe/Dissolve combination. When this happens, the Picture Wipe/Dissolve indicator blinks. Also note that power shuts off automatically if 5 minutes elapse in the Record-Standby mode.*
- *The sound at the end of the last recorded scene is not stored.*

FADE/WIPE SELECTION (WH, BK, ⊠, BW, ◣, □, ◀, ◀▶, ▲, ▲▼ and ?R)

Fade or Wipe works when recording is started or when you stop recording.

1 Set the Power Switch to "M".

2 Press **MENU/BRIGHT**. The Recording Menu appears.

3 Rotate **MENU/BRIGHT** to move the highlight bar to "FADER/WIPE", then press it.

4 Rotate **MENU/BRIGHT** to move the highlight bar to the desired function, then press it.
- The FADER/WIPE Menu disappears and the effect is reserved. The indicator representing the selected effect appears.

5 Press the Recording Start/Stop Button to activate the Fade-in/out or Wipe-in/out.

PICTURE WIPE OR DISSOLVE SELECTION (⧉P, ◣P, □P, ◀P, ◀▶P, ▲P and ▲▼P)

The Picture Wipe or Dissolve works when recording is started.

1 Follow steps **1** through **4** above.

2 Engage the Record-Standby mode.

If you select Picture Wipe/Dissolve during recording . . .

.... press the Recording Start/Stop Button when one scene is finished. The point at which the scene ended is stored in memory.

If you select Picture Wipe/Dissolve during Record-Standby mode . . .

.... press the Recording Start/Stop Button to start recording and press it again when one scene is finished. The point at which the scene ended is stored in memory.

If you select Picture Wipe/Dissolve during Record-Standby mode after performing a Picture Wipe/Dissolve . . .

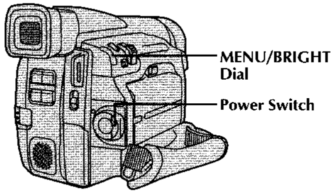
.... the point at which the scene ended is already stored in memory.

3 If you start recording a new scene within 5 minutes of the end of the previous recording (without having turned the camcorder's power off), the previous scene wipes out, revealing the new scene.

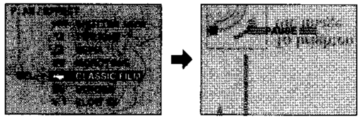
Fader And Wipe Menu

Menu	Effect
WH FADER — WHITE	Fade in or out with a white screen.
BK FADER — BLACK	Fade in or out with a black screen.
⊠ FADER — MOSAIC	Fade in or out with a full-screen mosaic effect.
BW FADER — B.W	Fade in to a colour screen from a black and white screen, or fade out from colour to black and white.
◣ WIPE — CORNER	Wipe in on a black screen from the upper right to the lower left corner, or wipe out from lower left to upper right, leaving a black screen.
□ WIPE — WINDOW	The scene starts in the centre of a black screen and wipes in toward the corners, or comes in from the corners, gradually wiping out to the centre.
◀ WIPE — SLIDE	Wipe in from right to left, or wipe out from left to right.
◀▶ WIPE — DOOR	Wipe in as the two halves of a black screen open to the left and right, revealing the scene, or wipe out and the black screen reappears from left and right to cover the scene.
▲ WIPE — SCROLL	The scene wipes in from the bottom to the top of a black screen, or wipes out from top to bottom, leaving a black screen.
▲▼ WIPE — SHUTTER	Wipe in from the centre of a black screen toward the top and bottom, or wipe out from the top and bottom toward the centre leaving a black screen.
⧉P DISSOLVE	The new scene gradually appears as the old one gradually disappears.
◣P WIPE — CORNER	The new scene wipes in over the previous one from the upper right corner to the lower left corner.
□P WIPE — WINDOW	The next scene gradually wipes in from the centre of the screen toward the corners, covering the previous scene.
◀P WIPE — SLIDE	The next scene gradually wipes in over the previous one from right to left.
◀▶P WIPE — DOOR	The previous scene wipes out from the centre to the right and left, like a door being pushed open to reveal the next scene.
▲P WIPE — SCROLL	The new scene wipes in over the last one from the bottom of the screen to the top.
▲▼P WIPE — SHUTTER	The new scene wipes in over the previous one from the centre toward the top and bottom of the screen.
?R RANDOM	When this function is activated, the camcorder randomly selects the effect used in scene transition (from BW, ⊠, WH, BK, □, ▲, ▲▼, ◀, ◀▶, and ◣). The Picture Wipe/Dissolve function is not available.

IMPORTANT:
Some modes of Programme AE with special effects cannot be used with certain Fade/Wipe Effects (☞ pg. 23). If an unusable mode is selected, its indicator blinks.



Display



P.AE/EFFECT Menu

Programme AE With Special Effects

1. Set the Power Switch to "Ⓜ".
2. Press **MENU/BRIGHT**. The Recording Menu appears.
3. Rotate **MENU/BRIGHT** to move the highlight bar to "P.AE/EFFECT", then press it.
4. Move the highlight bar to the desired mode by rotating **MENU/BRIGHT**, then press it. The P.AE/EFFECT Menu disappears and the selected mode is activated. The selected mode indicator appears.
5. To turn off the selected mode, re-access the P.AE/ EFFECT Menu and move the highlight bar to "OFF" by rotating **MENU/BRIGHT**. Then press it.

NOTE:
Programme AE with special effects can be changed during recording or during Record-Standby.

SHUTTER (Variable Shutter Speed)
1/50–The shutter speed is fixed at 1/50th of a second. Black bands that usually appear when shooting a TV screen become narrower.
1/100–The shutter speed is fixed at 1/100th of a second. The flickering that occurs when shooting under a fluorescent light or mercury-vapour lamp is reduced.
1/250, 1/500–These settings allow fast-moving images to be captured one frame at a time, for vivid, stable slow-motion playback. The faster the shutter speed, the darker the picture becomes. Use the shutter function under good lighting conditions.

TWILIGHT
Makes evening scenes look more natural. White Balance (☞ pg. 28) is initially set to ☀, but can be changed to your desired setting. When Twilight is chosen, the camcorder automatically adjusts the focus from approx. 10 m to infinity. From less than 10 m, adjust the focus manually.

SEPIA
Recorded scenes have a brownish tint like old photos. Combine this with the Cinema mode for a classic look.

B/W MONOTONE
Like classic black and white films, your footage is shot in B/W. Used together with the Cinema mode, it enhances the "classic film" effect.

CLASSIC FILM
Gives recorded scenes a strobe effect.

STROBE
Your recording looks like a series of consecutive snapshots.

SLOW (Slow Shutter)
You can light dark subjects or areas even brighter than they would be under good natural lighting.

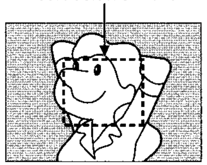
1 SLOW 4X
The Shutter Speed is set to 1/12.5th of a second to quadruple the sensitivity.

2 SLOW 10X
The Shutter Speed is set to 1/5th of a second to provide 10 times the sensitivity.

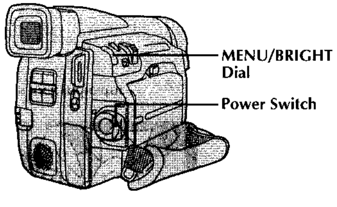
NOTES:
- *When using "SLOW", the image takes on a strobe-like effect.*
- *Use "SLOW" only in dark areas.*
- *The Manual Focus indication may appear and flash when "SLOW" is in use.*
- *If the image is out of focus, adjust manually. It is also recommended that you use a tripod, if possible.*

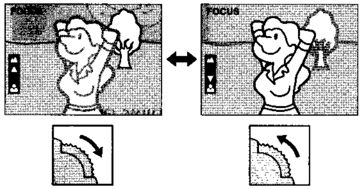
VIDEO ECHO
Adds a "ghost" to the subject, giving your recording a "fantasy" feeling.

Focus detection zone



NOTES:
- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom out first (☞ pg. 14). If zoomed-in in the auto focus mode, the camcorder may automatically zoom out depending on the distance between the camcorder and the subject. This will not occur when "TELE MACRO" (☞ pg. 20) is activated.*





NOTES:
- *When the power is turned off, Manual Focus will be reset to "AUTO".*
- *Be sure to focus the lens in the maximum telephoto position when you use the Manual Focus mode. If you focus in on a subject in the wide-angle position, sharply focused images cannot be obtained when zoomed up because the depth-of-field is reduced at longer focal lengths.*
- *When the focus level cannot be adjusted any further or closer, "▲" or "▲" will blink.*

Focusing

AUTO FOCUS

The camcorder's Full Range AF system offers continuous shooting ability from close-up (as close as approx. 5 cm to the subject) to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):
- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

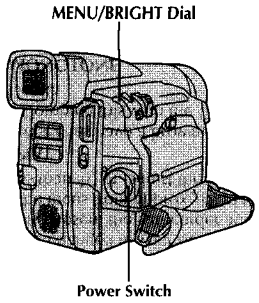
* The following low-contrast warnings appear blinking: ▲, ▲, ▼ and ▲

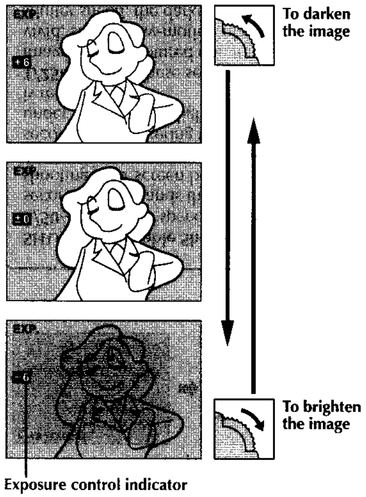
MANUAL FOCUS

If you are using the viewfinder, you should already have made the necessary viewfinder adjustments (☞ pg. 11).

1. Set the Power Switch to "Ⓜ".
2. Press **MENU/BRIGHT**. The Recording Menu appears.
3. Rotate **MENU/BRIGHT** to move the highlight bar to "FOCUS", then press it.
4. Rotate **MENU/BRIGHT** to display "MANUAL", then press it. The Recording Menu disappears and "FOCUS" is displayed in the upper left corner. The focus is locked at this point.
5. To focus on a farther subject, rotate **MENU/BRIGHT** downward. "▲" appears and blinks.
   To focus on a nearer subject, rotate **MENU/BRIGHT** upward. "▼" appears and blinks.
6. Press **MENU/BRIGHT**. Focus adjustment is complete. The indication changes from "FOCUS" to "MANUAL".
   - If you want to reset the focus, repeat from step **2**.

To Change To Auto Focus . . .
.... rotate **MENU/BRIGHT** to display "AUTO" then press it in step **4**. The manual focus indicators disappear. Or, set the Power Switch to "Ⓐ".





Exposure Control

This feature automatically adjusts the iris for the best available picture quality, but you can override it and make the adjustment manually. Manual exposure adjustment is recommended in the following situations:

- *When shooting using reverse lighting or when the background is too bright.*
- *When shooting on a reflective natural background such as at the beach or when skiing.*
- *When the background is overly dark or the subject light.*

1 Set the Power Switch to "M".

2 Press **MENU/BRIGHT**. The Recording Menu appears.

3 Rotate **MENU/BRIGHT** to move the highlight bar to "EXPOSURE", then press it.

4 Rotate **MENU/BRIGHT** to display "MANUAL", then press it. The Recording Menu disappears. "EXP." and the highlight bar on the exposure control indicator are displayed.

5 To brighten the image, rotate **MENU/BRIGHT** downward. The exposure control indicator increases (maximum +6).

To darken the image, rotate **MENU/BRIGHT** upward. The exposure control indicator decreases (maximum –6).

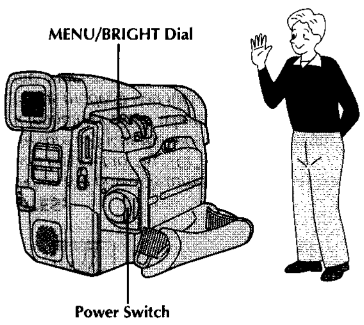
6 Press **MENU/BRIGHT**. Exposure adjustment is complete. The indication "EXP." changes to "MANUAL" and the highlight bar on the exposure control indicator goes out.
- If you want to reset the exposure, repeat step **2**.

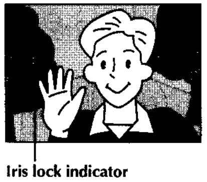
To Return To Automatic Exposure Control . . .

.... rotate **MENU/BRIGHT** to display "AUTO" then press it in step **4**. The exposure control indicator disappears. Or, set the Power Switch to "A".

NOTE:

When the power is turned off, Exposure Control will be reset to "AUTO".





Iris Lock

Use this function in the following situations:

- *When shooting a moving subject.*
- *When the distance to the subject changes (so its size in the LCD monitor or the viewfinder changes), such as when the subject is backing away.*
- *When shooting on a reflective natural background such as at the beach or when skiing.*
- *When shooting objects under a spotlight.*
- *When zooming.*

When the subject is close, keep the iris locked. Even when the subject moves away from you, the image will not darken or brighten.

Before the following steps, perform steps 1 through 4 (☞ pg. 26).

5 Adjust zoom so that the subject fills the LCD monitor or the viewfinder, then press and hold **MENU/BRIGHT** for over 2 seconds. The exposure control indicator and "L" appear, indicating that the iris is locked.
Press **MENU/BRIGHT**. The indication displayed in the upper left corner changes from "EXP." to "MANUAL".

To Return To Automatic Iris Control . . .

.... rotate **MENU/BRIGHT** to display "AUTO" then press it in step **4**. The exposure control indicator and "L" disappear. Or, set the Power Switch to "A".

To Lock The Exposure Control And The Iris . . .

.... after step **4**, adjust the exposure rotating **MENU/BRIGHT**. Then lock the iris in step **5**. For automatic locking, rotate **MENU/BRIGHT** to display "AUTO", then press it in step **4**. The iris becomes automatic after about 2 seconds.

Iris

Like the pupil of the human eye, it contracts in well-lit environments to keep too much light from entering, and dilates in dim environments to allow in more light.

White Balance Adjustment

A term that refers to the correctness of colour reproduction under various lighting. If the white balance is correct, all other colours will be accurately reproduced.
The white balance is usually adjusted automatically. However, more advanced camcorder operators control this function manually to achieve a more professional colour/tint reproduction.

1. Set the Power Switch to "Ⓜ".
2. Press **MENU/BRIGHT**. The Recording Menu appears.
3. Rotate **MENU/BRIGHT** to move the highlight bar to "W.BALANCE", then press it.
4. The Recording Menu disappears. "W.BAL." appears in the upper left corner and the currently selected mode indication is also displayed.
5. Rotate **MENU/BRIGHT** to display the desired setting.
   "AUTO" – White balance is adjusted automatically (factory preset).
   "☒" – White balance is set manually.
   "☀" – Outdoors on a sunny day.
   "☁" – Outdoors on a cloudy day.
   "✳" – A video light or similar type of lighting is used.
6. Press **MENU/BRIGHT** again. Selection is complete. The indication "W.BAL." changes to "MANUAL".

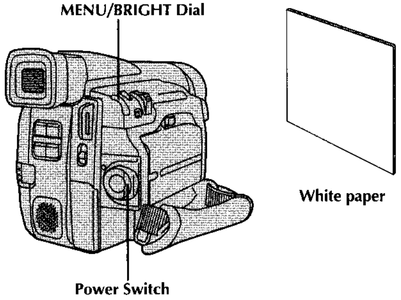
To Return To Automatic White Balance . . .
.... select "AUTO" in step **5**. Or, set the Power Switch to "Ⓐ".

NOTE:
White balance cannot be used when Sepia or Monotone (☞ pg. 24) is activated.

Manual White Balance Operation

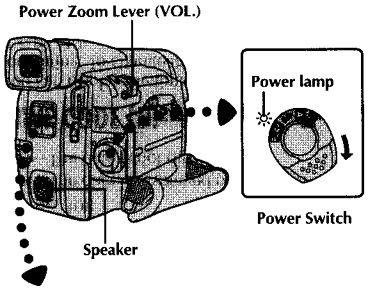
Perform Manual White Balance when shooting under various types of lighting.

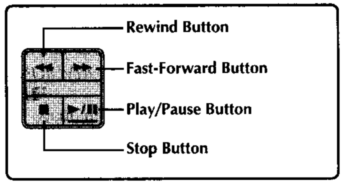
1. Follow steps **1** through **5** of the white balance adjustment, and select "☒ MAN.".
2. Hold a sheet of plain white paper in front of the subject. Adjust zoom or position yourself so that the white paper fills the screen.
3. Press **MENU/BRIGHT** until ☒ begins blinking. When the setting is completed, ☒ stops blinking.
4. Press **MENU/BRIGHT**. The indication "W.BAL." changes to "MANUAL" and only the Manual White Balance indicator ☒ is displayed.



To Change The Tint For Recording . . .
.... in step **2**, substitute coloured paper for white. The white balance is adjusted based on the colour, changing the tint. Red paper = deeper green; blue paper = orange; yellow paper = deeper purple.

NOTES:
- *In step **2**, it may be difficult to focus on the white paper. In such a case, adjust focus manually (☞ pg. 25).*
- *A subject can be shot under various types of lighting conditions indoors (natural, flourescent, candlelight, etc.). Because the colour temperature is different depending on the light source, the subject tint will differ depending on the white balance settings. Use this function for a more natural result.*
- *Once you adjust white balance manually, the setting is retained even if the power is turned off or the battery removed.*





1. Load a tape (☞ pg. 9).
2. Set the Power Switch to "PLAY". To start playback, press ►/❚❚.
   - To stop playback, press ■.
   - Press ◄◄ to rewind, or ►► to fast-forward the tape during Stop mode.

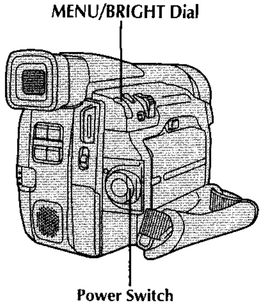
To Control The Speaker Volume . . .
.... slide the Power Zoom Lever (**VOL.**) towards "+" to turn up the volume, or towards "–" to turn down the volume.

Still Playback: Pauses during playback.
1) Press ►/❚❚ during playback.
2) To resume normal playback, press ►/❚❚ again.
- *If still playback continues for more than about 3 minutes, the camcorder's Stop mode is automatically engaged. After 5 minutes in the Stop mode, the camcorder's power is automatically turned off.*
- *When ►/❚❚ is pressed, the image may not pause immediately while the camcorder stabilizes the still image. During this time, if **PAUSE** (❚❚) on the remote control is pressed, Slow-Motion Playback will start. This is not a malfunction.*

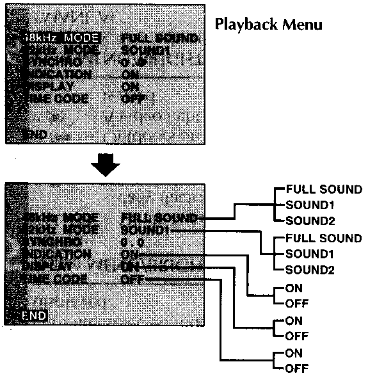
Shuttle Search: Allows high-speed search in either direction.
1) Press ►► for forward or ◄◄ for reverse search during playback.
2) To resume normal playback, press ►/❚❚.
- *During playback, press and hold ◄◄ or ►►. The search continues as long as you hold the button. Once you release it, normal playback resumes.*
- *A slight mosaic effect appears on screen during Shuttle Search. This is not a malfunction.*

Slow-Motion Playback, Frame-By-Frame Playback, Playback Zoom and Playback Special Effects
Available only with the RM-V711U remote control (provided) (☞ pg. 40, 41).

NOTES:
- *If Stop mode continues for 5 minutes when power is supplied from a battery, the camcorder shuts off automatically. To turn on again, set the Power Switch to "OFF", then to "PLAY".*
- *The playback picture can be viewed in the LCD monitor, viewfinder or on a connected TV (☞ pg. 32, 33).*
- *You can also view the playback picture on the LCD monitor with it flipped over and retracted.*
- *LCD monitor/viewfinder indications:*
  - *When power is supplied from a battery: the "▭" battery pack remaining power indicator is displayed. When power is supplied through the DC cord: "▭" does not appear.*
  - *During Stop mode, none of the indications are displayed.*
- *Copyguarded tapes cannot be played back. Only a blue screen is displayed.*



Display



Playback Menu

The Playback Menu allows you to set the following functions:
Playback Sound (32 kHz, 48 kHz), Synchro Comp, Indication, Display and Time Code. The following procedure applies to all except *Synchro Comp (☞ pg. 46, 47).*

1. Set the Power Switch to "PLAY".
2. Press **MENU/BRIGHT**. The Playback Menu appears.
3. Move the highlight bar to the desired function by rotating **MENU/BRIGHT**. Press it to activate.
4. Rotate **MENU/BRIGHT** to display the desired setting. Then press **MENU/BRIGHT**, and the highlight bar automatically moves to "END".
   - To set parameters for other functions, repeat steps **3** and **4**.
5. Press **MENU/BRIGHT** again. The menu disappears.

Playback Sound

During playback, the camcorder detects the sound mode in which the recording was made, and plays the sound back. Select the type of sound to accompany your playback picture. (32 kHz is preset to "SOUND 1" and 48 kHz is preset to "FULL SOUND".)

Recording sound	Display	Output sound
32 kHz	FULL SOUND	Stereo sound
	SOUND 1	
	SOUND 2	
48 kHz	FULL SOUND	Stereo sound
	SOUND 1	"L" sound is output on both channels
	SOUND 2	"R" sound is output on both channels

If you want to change the output sound of a tape recorded at 32 kHz, access the Playback Menu and, in step **3** on page 30, select "32 kHz MODE" and set it for "FULL SOUND", "SOUND 1" or "SOUND 2". For tapes recorded at 48 kHz, set in the same manner.

NOTES:
- *You can also use the provided RM-V711U remote control's* ***AUDIO MONITOR*** *button to change the output sound (without having to access the Playback Menu). Make sure you point the remote control at the camcorder's remote sensor.*
- *The camcorder cannot detect the sound mode in which the recording was made during fast-forward or rewind. During playback the sound mode is displayed in the upper left corner.*

INDICATION

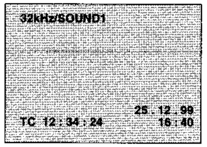
You can make the playback sound, time code and date indications disappear. This function overrides the "TIME CODE" and "DISPLAY" settings in the Playback Menu. To change this setting, select "INDICATION" in the Playback Menu (☞ pg. 30).

OFF– The playback sound, time code and date indications do not appear on the Playback Screen.

ON– The playback sound, time code and date indications are displayed according to how "TIME CODE" and "DISPLAY" are set in the Playback Menu (factory preset).

NOTE:
If "INDICATION" is set in the Date/Time Menu, "INDICATION" in the Playback Menu will also be set to the same setting (☞ pg. 18, 20).

Display

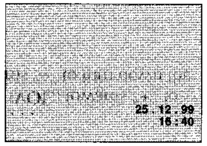


DISPLAY (Displaying the Date During Playback)

If the time has been set, the date is automatically recorded separately from the recording video signal. You can display or remove the date anytime during playback. To change this setting, select "DISPLAY" in the Playback Menu (☞ pg. 30).

ON– The date is displayed on the playback screen (factory preset).

OFF– The date is not displayed.

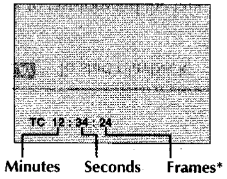


TIME CODE (Displaying The Time Code During Playback)

You can display the time code on screen during playback. This is especially useful for editing. To change this setting, select "TIME CODE" in the Playback Menu (☞ pg. 30).

ON– The time code is displayed on the playback screen.

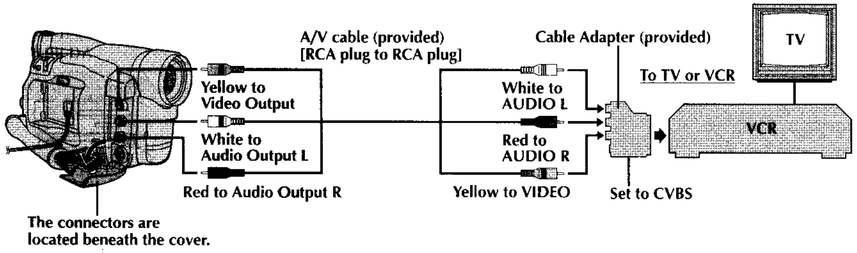
OFF– The time code does not appear (factory preset).



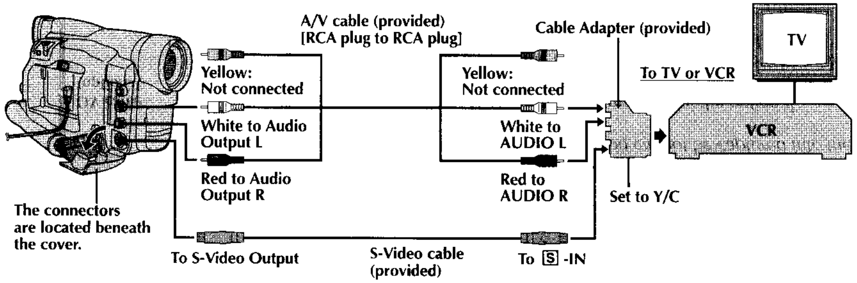
*25 frames = 1 second

These are some basic types of connections. When making the connections, refer also to your VCR and TV instruction manuals.

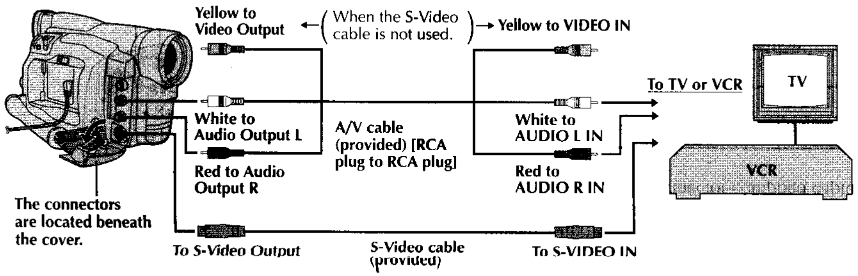
A. Connection to a TV or VCR equipped with a SCART connector compatible only with regular video signal


A/V cable (provided)
[RCA plug to RCA plug]
Cable Adapter (provided)
TV
To TV or VCR
Yellow to Video Output
White to Audio Output L
Red to Audio Output R
White to AUDIO L
Red to AUDIO R
Yellow to VIDEO
Set to CVBS
VCR
The connectors are located beneath the cover.

B. Connection to a TV or VCR equipped with a SCART connector compatible with Y/C signal


A/V cable (provided)
[RCA plug to RCA plug]
Cable Adapter (provided)
TV
To TV or VCR
Yellow: Not connected
White to Audio Output L
Red to Audio Output R
Yellow: Not connected
White to AUDIO L
Red to AUDIO R
Set to Y/C
VCR
The connectors are located beneath the cover.
To S-Video Output
S-Video cable (provided)
To S -IN

C. Connection to a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors


Yellow to Video Output
When the S-Video cable is not used.
Yellow to VIDEO IN
To TV or VCR
TV
White to Audio Output L
A/V cable (provided) [RCA plug to RCA plug]
White to AUDIO L IN
Red to Audio Output R
Red to AUDIO R IN
VCR
The connectors are located beneath the cover.
To S-Video Output
S-Video cable (provided)
To S-VIDEO IN

1 Make sure all units are turned off.

2 Connect the camcorder to a TV or VCR as shown in the illustration (☞ pg. 32).
If using a VCR . . . go to step 3.
If not . . . go to step 4.

3 Connect the VCR output to the TV input, referring to your VCR's instruction manual.

4 Turn on the camcorder, the VCR and the TV.

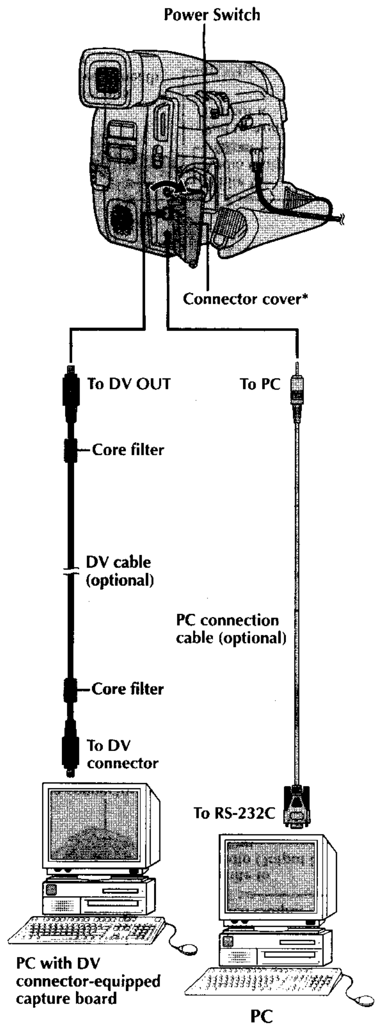
5 Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

To choose whether or not the following displays appear on the connected TV . . .

- Date/Time
  .... set "DISPLAY" to "ON" or "OFF" in the Playback Menu (☞ pg. 30).
- Time Code
  .... set "TIME CODE" to "ON" or "OFF" in the Playback Menu (☞ pg. 30).
- Playback Sound Mode Display
  .... set the Power Switch to "M". Press **MENU/ BRIGHT** and set "ON SCREEN" in the Date/ Time Menu (☞ pg. 18 – 20) to "ON" or "OFF". Then, set the Power Switch back to "PLAY".

NOTES:

- ***It is recommended to use the AC Power Adapter/ Charger as the power supply instead of the battery pack (☞ pg. 7).***
- *To monitor the picture and sound from the camcorder without inserting a tape, set the camcorder's Power Switch to "A" or "M", then set your TV to the appropriate input mode.*
- *Make sure you adjust the TV sound volume to its minimum level to avoid a sudden burst of sound when the camcorder is turned on.*
- *If you have a TV or speakers that are not specially shielded, do not place the speakers adjacent to the TV as interference will occur in the camcorder playback picture.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C : When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS : When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.


Power Switch
Connector cover*
To DV OUT
To PC
Core filter
DV cable (optional)
PC connection cable (optional)
Core filter
To DV connector
To RS-232C
PC with DV connector-equipped capture board
PC

* When connecting cables, open this cover.

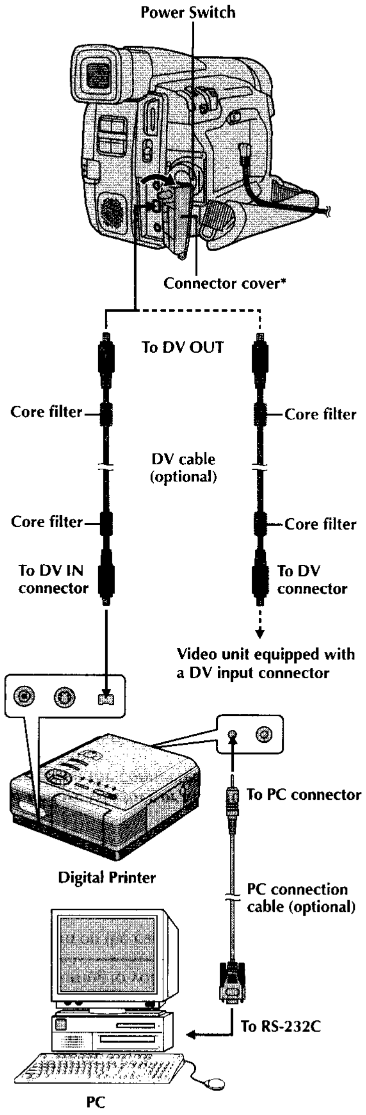
Connection To A Personal Computer

This camcorder can transfer still images to a PC using optional software (such as the HS-V4KIT) when connected as shown in the illustration. It is also possible to transfer still images to a PC with a DV connector-equipped capture board installed.

1. Make sure the camcorder and PC are turned off.
2. Connect the camcorder to your PC using the appropriate cable as shown in the illustration.
3. Turn the camcorder's Power Switch to " PLAY " and turn on the PC.

NOTES:

- ***It is recommended to use the AC Power Adapter/ Charger as the power supply instead of the battery pack (☞ pg. 7).***
- ***Never connect the PC connection cable and the DV cable simultaneously to the camcorder. Connect only the cable you wish to use to the camcorder.***
- *The date/time information cannot be captured into the PC.*
- *Refer to the instruction manuals of the optional Software.*
- *Also refer to the manufacturer's instruction manual for the DV connector-equipped capture board.*
- *Be sure to use a DV cable with core filters.*


Power Switch
Connector cover*
To DV OUT
Core filter
Core filter
DV cable (optional)
Core filter
Core filter
To DV IN connector
To DV connector
Video unit equipped with a DV input connector
To PC connector
Digital Printer
PC connection cable (optional)
To RS-232C
PC

* When connecting cables, open this cover.

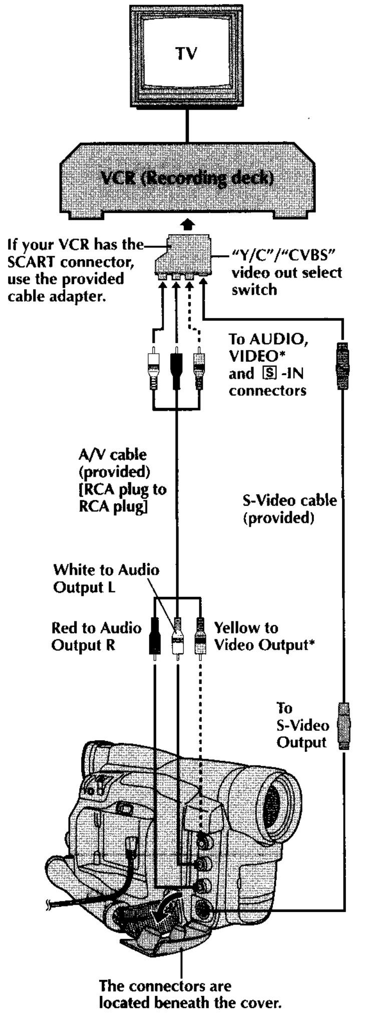
Connection To A Video Unit Equipped With A DV Connector

Connection to the GV-DT3 Digital Printer (optional) allows you to print out images or transfer them to a PC. It is also possible to copy recorded scenes from the camcorder onto another video unit equipped with a DV connector. This function is called Digital Dubbing (☞ pg. 37), which offers virtually no image or sound deterioration.

1. Make sure all units are turned off.
2. Make connections to the device you want to connect to using the DV cable, as shown in the illustration.
3. If necessary, connect a PC connection cable to the printer's PC connector and the PC's RS-232C connector.
4. Turn the camcorder's Power Switch to " PLAY " and turn on the other units.

NOTES:

- ***It is recommended to use the AC Power Adapter/ Charger as the power supply instead of the battery pack (☞ pg. 7).***
- *When using the camcorder for dubbing, be sure to use it as a player. The camcorder's DV connector is only for output.*
- *If Still Playback, Slow-Motion Playback, Fast-Forward or Rewind is attempted with the camcorder connected to a video unit via the DV connector, the image will take on an effect similar to a coloured mosaic pattern or it will become black.*
- *Also refer to the instruction manuals of the connected units.*
- *Be sure to use a DV cable with core filters.*


TV
VCR (Recording deck)
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
To AUDIO, VIDEO* and S -IN connectors
A/V cable (provided) [RCA plug to RCA plug]
S-Video cable (provided)
White to Audio Output L
Red to Audio Output R
Yellow to Video Output*
To S-Video Output
The connectors are located beneath the cover.

* Connect when the S-Video cable is not used.

Tape Dubbing

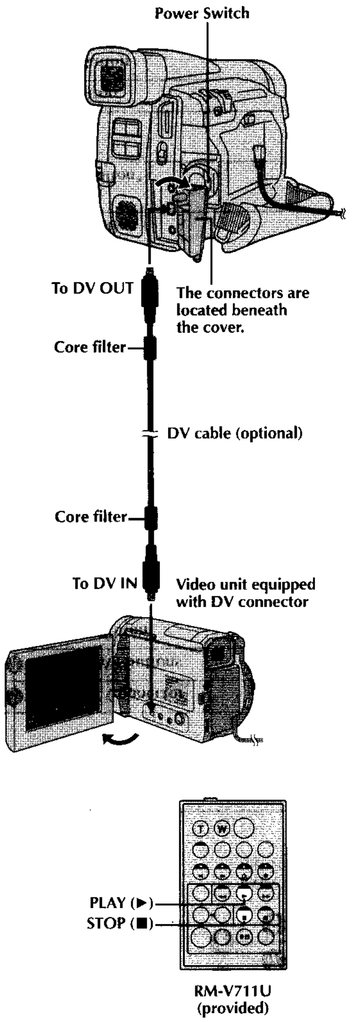
1. Following the illustration, connect the camcorder and the VCR. Also refer to pg. 32 and 33.
2. Set the camcorder's Power Switch to "PLAY", turn on the VCR's power, and insert the appropriate cassettes in the camcorder and the VCR.
3. Engage the VCR's AUX and Record-Pause modes.
4. Engage the camcorder's Play mode to find a spot just before the edit-in point. Once it is reached, press ▶/❚❚ on the camcorder.
5. Press ▶/❚❚ on the camcorder and engage the VCR's Record mode.
6. Engage the VCR's Record-Pause mode and press ▶/❚❚ on the camcorder.
7. Repeat steps **4** through **6** for additional editing, then stop the VCR and camcorder when finished.

NOTES:

- *You can use Playback Zoom (☞ pg. 40) or Playback Special Effects (☞ pg. 41) in step 5.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C : When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS : When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.
- *Before you start dubbing, make sure that the indications do not appear on the connected TV. If they do, they are being recorded onto the new tape.*

To choose whether or not the following displays appear on the connected TV . . .

- Date/Time
  .....set "DISPLAY" to "ON" or "OFF" in the Playback Menu (☞ pg. 30).
- Time Code
  .....set "TIME CODE" to "ON" or "OFF" in the Playback Menu (☞ pg. 30).
- Playback Sound Mode Display
  .....set the Power Switch to "M". Press **MENU/ BRIGHT** and set "ON SCREEN" in the Date/Time Menu (☞ pg. 18 – 20) to "ON" or "OFF". Then, set the Power Switch back to "PLAY".


Power Switch
To DV OUT
The connectors are located beneath the cover.
Core filter
DV cable (optional)
Core filter
To DV IN
Video unit equipped with DV connector
PLAY (▶)
STOP (■)
RM-V711U (provided)

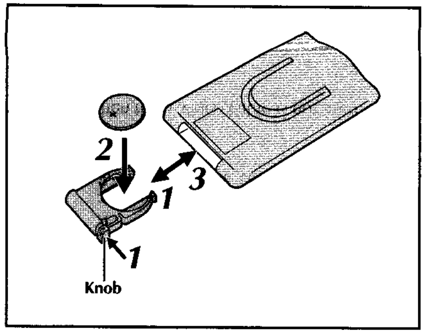
Digital Dubbing

It is also possible to copy recorded scenes from the camcorder onto another video unit equipped with a DV connector. Since a digital signal is sent, there is little if any image or sound deterioration.

1. Make sure the camcorder's power is off.
2. Connect the camcorder to your video unit equipped with a DV connector using a DV cable as shown in the illustration.
3. Press ▶ to play back the source tape.
4. While watching the playback on the monitor, engage the DV connector-equipped video unit's record mode from the spot on the source tape you want to begin recording.

NOTES:

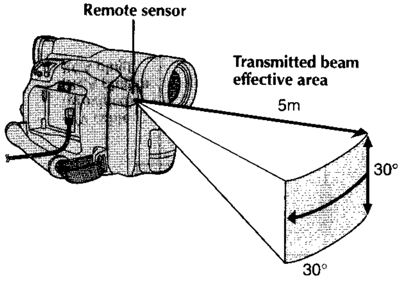
- ***It is recommended to use the AC Power Adapter/ Charger as the power supply instead of the battery pack (☞ pg. 7).***
- *When using the camcorder for dubbing, be sure to use it as a player. The camcorder's DV connector is only for output.*
- *If a blank portion or disturbed image is played back on the player during dubbing, the dubbing may stop so that an unusual image is not dubbed.*
- *Even though the DV cable is connected correctly, sometimes the image may not appear in step* ***3***. *If this occurs, turn off the power and make connections again.*
- *If "Playback Zoom" (☞ pg. 40), "Playback Special Effects" (☞ pg. 41) or "Snapshot" is attempted during playback, only the original playback image recorded on the tape is output from the DV OUT connector.*
- *Be sure to use a DV cable with core filters.*



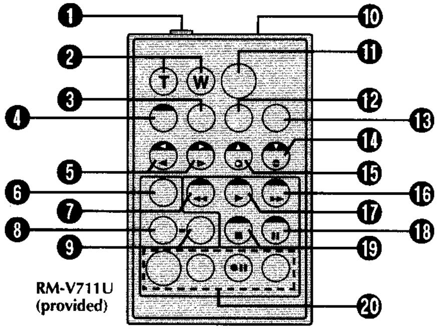
Installing The Battery

The Full-Function Remote Control Unit can operate this camcorder from a distance as well as the basic operations (Playback, Stop, Pause, Fast-Forward and Rewind) of your VCR. It also makes additional playback functions possible.
The remote control uses one lithium battery (CR2025).

1. Pull out the battery holder while pressing the knob as shown.
2. Insert the battery in the holder, and be sure to have the "+" mark visible.
3. Slide the holder back in until you hear a click.
   - Read the caution concerning lithium batteries (☞ pg. 2).

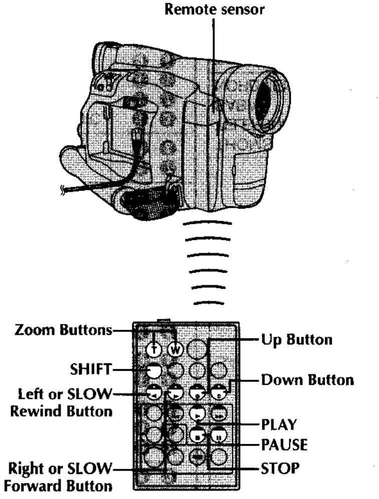


When using the remote control, be sure to point it at the remote sensor. The illustration shows the approximate transmitted beam effective area for indoor use.
The transmitted beam may not be effective or may cause incorrect operation outdoors or when the remote sensor is directly exposed to sunlight or powerful lighting.



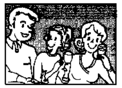
Buttons	Functions	
	With the camcorder's Power Switch set to the camera position ("A" or "M").	With the camcorder's Power Switch set to "PLAY".
① PAUSE IN Connector	—	☞ pg. 43
② Zoom (T/W) Buttons	Zoom in/out (☞ pg. 14)	Zoom in/out (☞ pg. 40)
③ DISPLAY Button	—	☞ pg. 20
④ SHIFT Button	—	☞ pg. 40
⑤ SLOW Rewind/Forward Buttons Left/Right Buttons	— —	☞ pg. 40 ☞ pg. 40
⑥ FADE/WIPE Button	—	☞ pg. 43
⑦ REW Button	—	Rewind, Reverse Shuttle Search (☞ pg. 29)
⑧ EFFECT Button	—	☞ pg. 41
⑨ EFFECT ON/OFF Button	—	☞ pg. 41
⑩ Infrared beam transmitting window	Transmits the beam signal.	
⑪ START/STOP Button	Functions same as the Recording Start/Stop button on the camcorder.	
⑫ AUDIO MONITOR Button	—	☞ pg. 31
⑬ MBR SET Button	—	☞ pg. 42
⑭ Down Button A. DUB Button	— —	☞ pg. 40 ☞ pg. 48
⑮ Up Button INSERT Button*	— —	☞ pg. 40 —
⑯ FF Button	—	Fast-Forward, Forward Shuttle Search (☞ pg. 29)
⑰ PLAY Button	—	Playback start (☞ pg. 29)
⑱ PAUSE Button	—	Pause (☞ pg. 29)
⑲ STOP Button	—	Stop (☞ pg. 29)
⑳ R.A.EDIT Buttons	—	☞ pg. 42 – 47

* This function is unavailable.

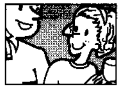


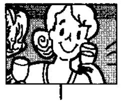
RM-V711U
(provided)

Normal playback



Press T





To move image, press ⊖ (Right) while keeping SHIFT held down.

FEATURE: Slow-Motion Playback

PURPOSE:

To allow slow-speed search in either direction.

OPERATION:

1) To change from normal to Slow-Motion Playback, press **PAUSE** (❚❚) at the desired point.
2) Press **SLOW** (◂❚ or ❚▸). After approx. 1 minute in Slow Rewind or approx. 2 minutes in Slow Forward, normal playback resumes.

■ To stop Slow-Motion Playback, press **PLAY** (▶).

NOTES:

- *During Slow-Motion Playback, due to digital image processing, the picture may take on a mosaic effect.*
- *After **SLOW** (◂❚ or ❚▸) is pressed, the still image may be displayed for a few seconds, followed by a blue screen for a few seconds. This is not a malfunction.*
- *There may be a small margin between the slow-motion playback start point you chose and the actual start point for Slow-Motion Playback.*
- *During Slow-Motion Playback, there will be disturbances in video and the picture may seem unstable, especially with steady images. This is not a malfunction.*
- *During Slow-Motion Playback, press **PAUSE** (❚❚) to pause playback.*

FEATURE: Frame-By-Frame Playback

PURPOSE:

To allow frame-by-frame search.

OPERATION:

1) To change from normal to Frame-By-Frame Playback, press **PAUSE** (❚❚) at the desired point.
2) Press **PAUSE** (❚❚) repeatedly. Each time it is pressed, the frame is played back.

FEATURE: Playback Zoom

PURPOSE:

To magnify the recorded image up to 4X at any time during playback.

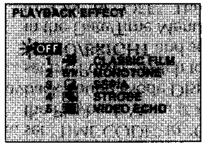
OPERATION:

1) Press **PLAY** (▶) to find the scene of interest.
2) Press the Zoom Buttons (**T/W**) on the remote control. Make sure the remote control is pointed at the camcorder's remote sensor. Pressing **T** zooms in.
3) You can move the image on screen around to find a particular portion of the picture. While holding down **SHIFT**, press ⊖ (**Left**), ⊖ (**Right**), ⊖ (**Up**) and ⊖ (**Down**).

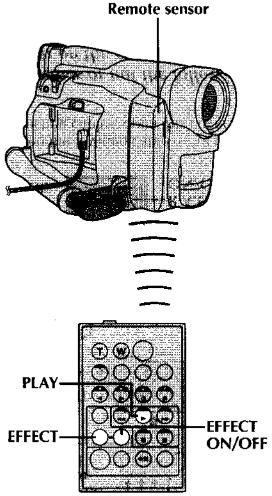
■ To end zoom, press and hold **W** until magnification returns to normal. Or, press **STOP** (■) and then press **PLAY** (▶).

NOTES:

- *Zoom can also be used during slow-motion and still playback.*
- *Due to digital image processing, the quality of the image may suffer.*



PLAYBACK EFFECT Select Menu



RM-V711U
(provided)

FEATURE: Playback Special Effects

PURPOSE:

To allow you to add creative effects to the playback image.

OPERATION:

1) To start playback, press **PLAY** (▶).
2) Point the remote control at the camcorder's remote sensor and press **EFFECT**. The PLAYBACK EFFECT Select Menu appears.
3) Move the highlight bar to the desired effect by pressing **EFFECT**. The selected function is activated and after 2 seconds the menu disappears.

■ To deactivate the selected effect, press **EFFECT ON/OFF** on the remote control. Pressing it again re-activates the selected effect.

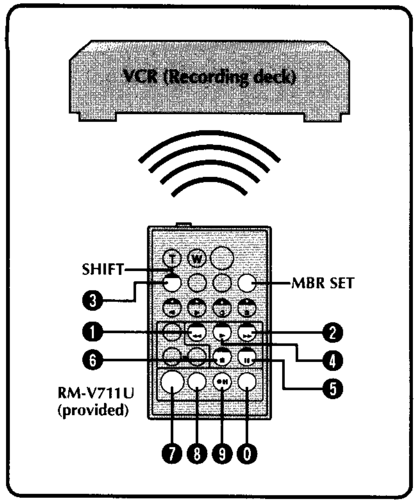
■ To change the selected effect, repeat from step **2** above.

NOTES:

- *When some Playback Special Effects are used, the Multi-Analyser 4 and Multi-Analyser 9 Snapshot modes (☞ pg. 17) are not available.*
- *The effects that can be used during playback are Classic Film, Monotone, Sepia, Strobe and Video Echo. The effects work the same in playback as they did in recording. Refer to page 24 for more information.*

Random Assemble Editing [R.A.Edit]

Create edited videos easily using your camcorder as the source player. You can select up to 8 "cuts" for automatic editing, in any order you like. R.A.Edit is more easily performed when the RM-V711U MBR (Multi-Brand Remote) is set to operate with your brand of VCR (see VCR CODE LIST), but can also be performed by operating the VCR manually.
Before operation, make sure the lithium battery is installed in the remote control RM-V711U (☞ pg. 38).


VCR (Recording deck)
SHIFT
❸
❶
❻
MBR SET
❷
❹
❺
RM-V711U
(provided)
❼❽❾⓿

VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
AKAI	❻ ❷ ❻ ❹ ❼ ❼
BLAUPUNKT	❶ ❸
FERGUSON	❾ ❼ ❾ ❽ ❸ ❷
GRUNDIG	❶ ❹ ❸ ❹
HITACHI	❻ ❻ ❻ ❸
JVC A B C	❾ ❶ ❾ ❻ ❾ ❸
MITSUBISHI	❻ ❼ ❻ ❽
NEC	❸ ❼ ❸ ❽
PANASONIC	❶ ❸ ❶ ❼ ❶ ❶ ❾ ❹ ❶ ❽
PHILIPS	❶ ❾ ❾ ❺ ❶ ❶ ❾ ❹ ❾ ❶ ❾ ❻ ❶ ❷ ❸ ❸ ❼ ❷
SANYO	❸ ❻ ❸ ❺
SELECO, REX	❾ ❶ ❾ ❻
SHARP	❶ ❺ ❶ ⓿
SONY	❻ ❺ ❻ ⓿ ❸ ❾ ❸ ❶
THOMSON, TELEFUNKEN, SABA, NORDMENDE	❾ ❶ ❾ ❻ ❾ ❼ ❸ ❷
TOSHIBA	❻ ❾ ❻ ❶

SET REMOTE/VCR CODE

1 Turn off the power to the VCR and point the remote towards the VCR's infrared sensor. Then, referring to the VCR CODE LIST, press and hold **MBR SET**, and press button (A) and then (B). The code is automatically set once you release **MBR SET**, and the VCR's power comes on.

2 Make sure the VCR's power is on. Then, while holding **SHIFT**, press the button on the remote for the desired function. The functions the remote can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY (you do not need to press **SHIFT** for this one).

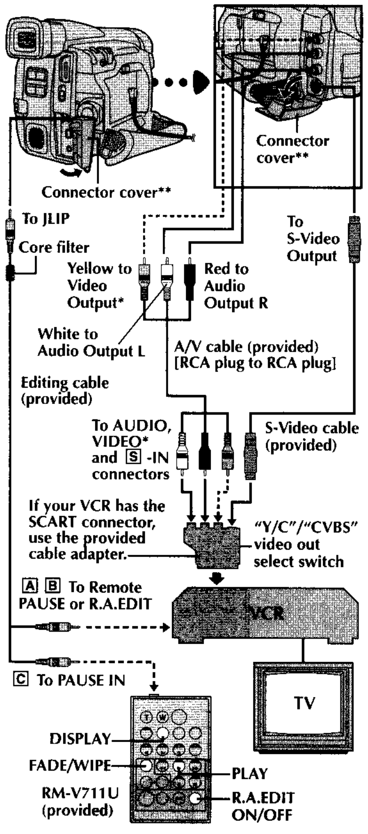
You are now ready to try Random Assemble Editing.

IMPORTANT

Although the MBR is compatible with JVC VCRs and those of many other makers, it may not work with yours or may offer limited functions.

NOTES:

- *If the VCR's power does not come on in step **1**, try another code from the VCR CODE LIST.*
- *Some brands of VCR do not come on automatically. In this case, turn the power on manually and try step **2**.*
- *If the remote control is not able to control the VCR, use the controls on the VCR.*
- *When the remote control's battery runs out, the VCR brand you have set will be erased.*
  In that case, replace the old battery with a new one to reset the VCR brand.


Connector cover**
Connector cover**
To JLIP
Core filter
Yellow to Video Output*
Red to Audio Output R
To S-Video Output
White to Audio Output L
A/V cable (provided) [RCA plug to RCA plug]
Editing cable (provided)
To AUDIO, VIDEO* and 🅂 -IN connectors
S-Video cable (provided)
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
🄰 🄱 To Remote PAUSE or R.A.EDIT
VCR
🄲 To PAUSE IN
TV
DISPLAY
FADE/WIPE
PLAY
RM-V711U (provided)
R.A.EDIT ON/OFF

* Connect when the S-Video cable is not used.
** When connecting cables, open this cover.

To choose whether or not the following displays appear on the connected TV . . .

- Date/Time
  .... set "DISPLAY" to "ON" or "OFF" in the Playback Menu (☞ pg. 30).
- Time Code
  .... set "TIME CODE" to "ON" or "OFF" in the Playback Menu (☞ pg. 30).
- Playback Sound Mode Display
  .... set the Power Switch to "🄼". Press **MENU/BRIGHT** and set "ON SCREEN" in the Date/Time Menu (☞ pg. 18 – 20) to "ON" or "OFF". Then, set the Power Switch back to "PLAY".

MAKE CONNECTIONS

Also refer to pg. 32 and 33.

1 To connect to:

🄰 A JVC VCR equipped with a remote pause connector . . .
... connect the editing cable to the Remote PAUSE connector.

🄱 A JVC VCR not equipped with a remote pause connector but equipped with an R.A. EDIT connector . . .
... connect the editing cable to the R.A.EDIT connector.

🄲 A VCR other than above . . .
... connect the editing cable to the RM-V711U's PAUSE IN connector.

2 Insert a recorded tape into the camcorder and set the Power Switch to "PLAY".

3 Turn the VCR power on, insert a recordable tape and engage the AUX mode (refer to the VCR's instructions).

SELECT SCENES

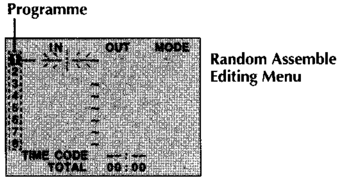
4 Point the remote control at the camcorder's remote sensor. Press **PLAY** (►) and then press **R.A.EDIT ON/OFF** on the remote control.
The Random Assemble Editing Menu appears.

5 If using a Fade/Wipe at the beginning of the scene, press **FADE/WIPE** on the remote control.
- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- You cannot use a Picture Wipe/Dissolve at the beginning of Programme 1.

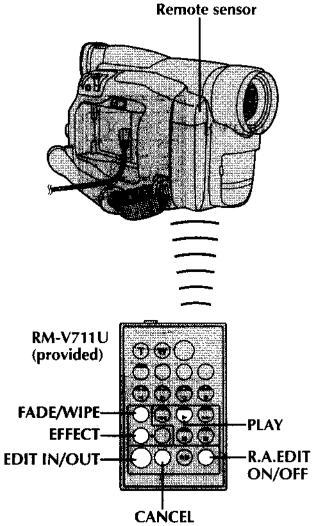
NOTES:

- *Before Random Assemble Editing, make sure the indications do not appear on the TV monitor. If they do, they will be recorded onto the new tape.*
- *When editing on a VCR equipped with DV input connector, the DV cable can be connected instead of the S-Video cable and Audio/Video cable.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C : When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS : When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.

CONTINUED ON NEXT PAGE



Random Assemble Editing Menu



SELECT SCENES (cont.)

6 At the beginning of the scene, press **EDIT IN/OUT** on the remote control. The Edit-In position appears in the Random Assemble Editing Menu.

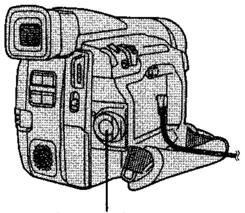
7 At the end of the scene, press **EDIT IN/OUT**. The Edit-Out position appears in the Random Assemble Editing Menu.

8 If using a Fade/Wipe at the end of the scene, press **FADE/WIPE**.
- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- If you select a Fade/Wipe effect for an Edit-Out point, the effect is automatically applied to the following Edit-In point.
- You cannot use a Picture Wipe/Dissolve at the end of the last scene.
- When you use Fade/Wipe effects, that time is included in the total time (this does not apply to Picture Wipe/Dissolve).

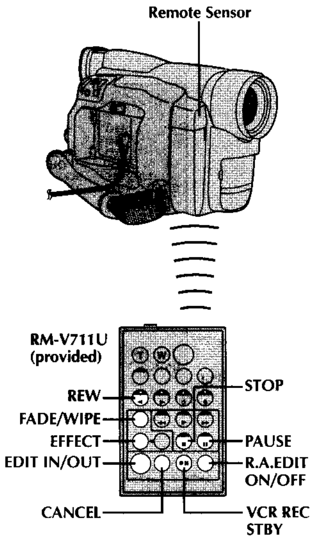
9 If using Playback Special Effects, press **EFFECT** (☞ pg. 41).

10 Repeat steps **6** through **9** to register additional scenes.
- To change previously registered points, press **CANCEL** on the remote control. The registered points disappear, one at a time, from the most recently registered point.
- If you are not using Fade/Wipe or Programme AE with special effects, repeat steps **6** and **7** only.

NOTES:
- *When choosing a scene, set Edit-In and Edit-Out points so that there is a relatively large difference between them.*
- *If the search time for an in-point exceeds 5 minutes, the recording deck's Record-Standby mode will be canelcled and editing will not take place.*
- *If there are blank portions before or after the Edit-In and Edit-Out points, a blue screen may be included in the edited version.*
- *Since time codes register time only as accurately as seconds, the time code total time may not match the total programme time exactly.*
- *Turning off the camcorder's power erases all registered Edit-In and Edit-Out points.*
- *If you select Sepia or Monotone mode from Programme AE with special effects, you cannot use the Dissolve or Black & White Fader. In this case the Dissolve or Black & White indicator begins blinking. Once the next Edit-In point is registered, the effect is turned off. To combine these effects, use Sepia or Monotone during recording, then use the Dissolve or Black & White Fader during Random Assemble Editing.*
- *It is not possible to use Fade/Wipe effects and Programme AE with special effects during Random Assemble Editing using a DV cable.*



Random Assemble Editing Menu



AUTOMATIC EDITING TO VCR

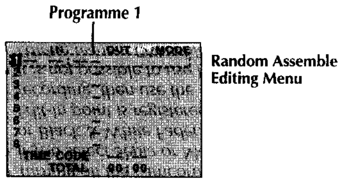
11 Rewind the tape in the camcorder to the beginning of the scene you want to edit and press **PAUSE (❚❚)**.

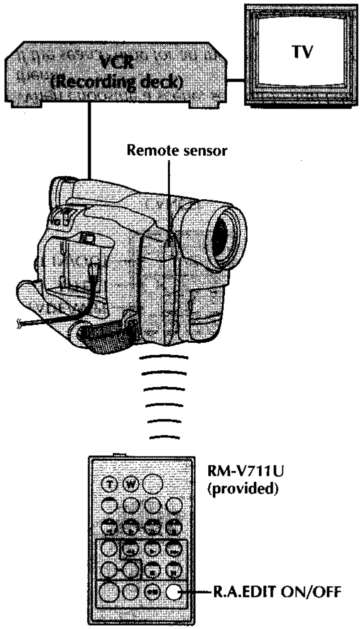
12 Point the remote control towards the VCR's remote sensor and press **VCR REC STBY (●❚❚)**, or manually engage the VCR's Record-Pause mode.

13 Press the Recording Start/Stop Button on the camcorder. Editing proceeds as programmed, right through to the end of the last registered scene.
- Pressing **START/STOP** on the remote control does not start editing.
- When dubbing is complete, the camcorder enters the Pause mode, and the recording deck enters its Record-Pause mode.
- If you do not register an Edit-Out point, the tape will be dubbed all the way to the end automatically.

14 Engage the Stop modes for the camcorder and the VCR.
To make the R.A.Edit counter display disappear, press **R.A.EDIT ON/OFF** on the remote control.

NOTES:
- *Pressing **R.A.EDIT ON/OFF** on the remote control clears all settings registered during Random Assemble Editing.*
- *When the editing cable is connected to the remote control's Pause In connector during dubbing, make sure the remote control is pointed at the VCR's sensor, and the path between the two is unobstructed.*
- *Random Assemble Editing may not function properly when using a tape including several duplicated time codes (☞ pg. 16).*





For More Accurate Editing

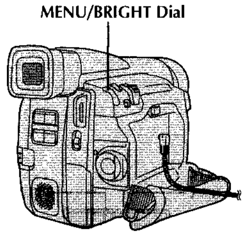
Some VCRs make the transition from Record-Pause to Record mode faster than others. Even if you begin editing for the camcorder and the VCR at exactly the same time, you may lose scenes you wanted, or find that you have recorded scenes you did not want. For a cleanly edited tape, confirm and adjust the timing of the camcorder against your VCR.

DIAGNOSING VCR/CAMCORDER TIMING

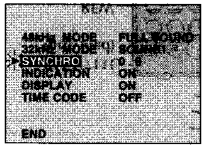
1. Play back the tape in the camcorder, then point the remote control at the camcorder's remote sensor and press **R.A.EDIT ON/OFF**.
   The Random Assemble Editing Menu appears.

2. Perform Random Assemble Editing on Programme 1 only. In order to check VCR and camcorder timing, select the beginning of a scene transition as your Edit-In point.

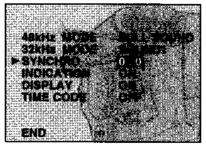
3. Play back the dubbed scene.
   - If any images from the scene prior to the transition you chose for your Edit-In point were recorded, that means your VCR moves too quickly from Record-Pause to Record mode.
   - If the scene you tried to dub starts in progress, the VCR is slow to start recording.



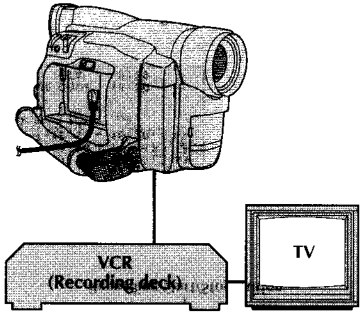
Display



48kHz MODE FULL SOUND
32kHz MODE SOUND1
SYNCHRO 0.0
INDICATION ON
DISPLAY ON
TIME CODE OFF
END



48kHz MODE FULL SOUND
32kHz MODE SOUND1
SYNCHRO 0.0
INDICATION ON
DISPLAY ON
TIME CODE OFF
END



ADJUSTMENT OF VCR/CAMCORDER TIMING

4. Point the remote control at the camcorder's remote sensor and press **R.A.EDIT ON/OFF** to make the Random Assemble Editing menu disappear, then press **MENU/BRIGHT**. The Playback Menu appears.

5. Move the highlight bar to "SYNCHRO" by rotating **MENU/BRIGHT**, then press it. The value for "SYNCHRO" is highlighted.

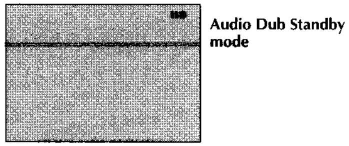
6. Based on the diagnostics performed (☞ pg. 46), you can now increase the VCR's speed by rotating **MENU/BRIGHT** downward. You can also slow down the VCR's speed by rotating **MENU/BRIGHT** upward. The adjustment range is from –1.3 to +1.3 seconds, in 0.1-second increments.

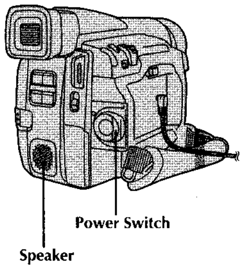
7. Press **MENU/BRIGHT** twice.
   Now perform Random Assemble Editing beginning with step **4** on page 43.

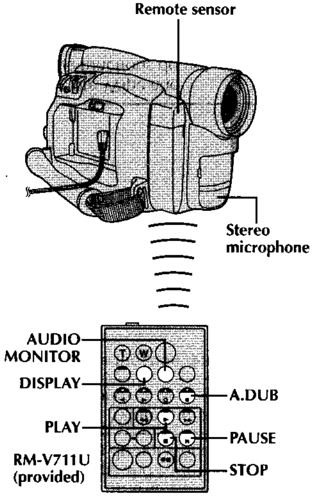
NOTES:

- *Before performing actual Random Assemble Editing, do a few Random Assemble Editing trial runs to check whether the value you have input is appropriate or not, and make adjustments accordingly.*
- *Depending on the recorder, there may be situations where the timing difference cannot be fully corrected.*

Display







Audio Dubbing

The audio track can be customized only when recorded in the 32 kHz mode (☞ pg. 20).

NOTES:

- *Audio Dubbing is not possible on a tape recorded at 48 kHz, on a tape recorded in the LP mode or on a blank portion of a tape.*
- *To perform Audio Dubbing while watching on the television, make connections (☞ pg. 32).*

1 Play back the tape to locate the point where editing will start, then press **PAUSE (❚❚)**.

2 While holding **A.DUB (⊖)** on the remote control, press **PAUSE (❚❚)**. "**❚❚⊖**" appears.

3 Press **PLAY (▶)** , then begin "narrating".
Speak into the microphone.
- To pause dubbing, press **PAUSE (❚❚)**.

4 To end Audio Dubbing, press **PAUSE (❚❚)**, then **STOP (■)**.

NOTES:

- *When editing onto a tape that was recorded at 32 kHz, the old and new soundtracks are recorded separately.*
- *To select the desired sound for playback, press **AUDIO MONITOR** on the remote control.*
- *If you dub onto a blank space on the tape, the sound may be disrupted. Make sure you only edit recorded areas.*
- *If feedback or howling occurs during TV Playback, move the camcorder's microphone away from the TV, or turn down the TV's volume.*
- *Sound is not heard from the speaker during Audio Dubbing.*
- *If you change from 32 kHz to 48 kHz in mid-recording and then use the tape for Audio Dubbing, it is not effective from the point where 48 kHz recording began.*
- *During Audio Dubbing, when the tape moves to scenes recorded in the LP mode, scenes recorded at 48 kHz or a blank portion, Audio Dubbing stops and "ERROR! REFER MANUAL" appears.*

Recording sound	Display	Output sound
32 kHz	FULL SOUND	Original and new tracks are combined and output in stereo.
	SOUND 2	New track is output on both "L" and "R" channels in stereo.
	SOUND 1	Original track is output on both "L" and "R" channels in stereo.

If, after following the steps in the chart below, the problem still exists, please consult your nearest JVC dealer.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and wait a few minutes; and then re-connect it and proceed as usual from the beginning.

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
1. No power is supplied.	*1.* • The power is not connected properly. • The battery is dead.	*1.* • Connect the AC Power Adapter/Charger securely (☞ pg. 7). • Replace the dead battery with a fully charged one (☞ pg. 6, 7).
2. "SET DATE/TIME!" appears.	*2.* • The built-in clock's rechargeable lithium battery is discharged. • The previously set date/time is erased.	*2.* • Connect the camcorder to an AC outlet using the AC Power Adapter/Charger for over 24 hours to charge the clock's lithium battery (☞ pg. 8).
3. Recording cannot be performed.	*3.* • The tape's erase protection switch is set to "SAVE". • The Power Switch is set to "PLAY". • "TAPE END" appears. • The cassette's cover is open.	*3.* • Set the tape's erase protection switch to "REC" (☞ pg. 9). • Set the Power Switch to any position except "PLAY" or "OFF" (☞ pg. 13). • Replace with new cassette (☞ pg. 9). • Close the cassette's cover.
4. There is no picture.	*4.* • The camcorder is not getting power, or some other malfunction exists.	*4.* • Turn the camcorder's power off and on again (☞ pg. 12).
5. Some functions are not available using **MENU/ BRIGHT.**	*5.* • The Power Switch is set to "A".	*5.* • Set the Power Switch to "M" (☞ pg. 13).
6. The focus does not adjust automatically.	*6.* • Focus is set to "MANUAL". • The recording was done in a dark place, or the contrast was low. • The lens is dirty or covered with condensation.	*6.* • Set Focus to "AUTO" (☞ pg. 25). • Clean the lens and check the focus again (☞ pg. 54).
7. The cassette will not load properly.	*7.* • The cassette is in the wrong position. • The battery's charge is low.	*7.* • Set it in the right position (☞ pg. 9). • Install a fully charged battery (☞ pg. 6, 7).
8. Snapshot mode cannot be used.	*8.* • The Squeeze mode is selected.	*8.* • Disengage the Squeeze mode (☞ pg. 19).
9. The Snapshot colour looks strange.	*9.* • The light source or the subject does not include white. Or there are various different light sources behind the subject.	*9.* • Find a white subject and compose your shot so that it also appears in the frame (☞ pg. 17).

CONTINUED ON NEXT PAGE

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
10. Digital Zoom does not work.	**10.** • 16X optical zoom is selected. • The Video Echo mode is activated. • Picture Wipe or Dissolve are being used in a scene transition.	**10.** • Turn off the Video Echo mode (☞ pg. 24). • Wait until the Picture Wipe or Dissolve effects are completed (☞ pg. 22, 23).
11. Programme AE with special effects and Fade/ Wipe Effects do not work.	**11.** • The Power Switch is set to "A".	**11.** • Set the Power Switch to "M".
12. The Black & White Fader does not work.	**12.** • The Sepia or Monotone mode is activated.	**12.** • Turn off Sepia and Monotone (☞ pg. 24).
13. The Dissolve function does not work.	**13.** • The Sepia, Monotone or Slow Shutter mode of Programme AE with special effects is activated. • The Squeeze mode is selected. • The previously selected mode of Programme AE with special effects was changed after the last selected scene for editing was registered.	**13.** • Turn off Sepia, Monotone or Slow Shutter before adding Dissolve to a scene transition (☞ pg. 24). • Make sure that the Squeeze mode in the Mode Menu is set to "OFF" (☞ pg. 19). • Make sure you have selected the mode of Programme AE with special effects you want before starting editing (☞ pg. 24).
14. The Picture Wipe and Dissolve functions do not work.	**14.** • The last selected editing scene is ending. • At the end of the last selected scene for editing, the Power Switch was set to "OFF". • The power is off.	**14.** • Select Picture Wipe or Dissolve before beginning recording. The effects are then automatically activated (☞ pg. 22). • Do not turn off the camcorder's power after setting Edit-In and Edit-Out points, as they will all be erased (☞ pg. 22). • The camcorder automatically shuts off after 5 minutes have elapsed in the Record-Standby mode. Make sure you continue operations within 5 minutes after engaging Record-Standby mode (☞ pg. 22).
15. The picture wipe function does not work.	**15.** • The Slow Shutter mode is activated. • The Squeeze or Cinema mode is selected in the Mode Menu.	**15.** • Make sure the Squeeze mode, Cinema mode, or Slow Shutter mode is not activated when preparing to use the Picture Wipe function (☞ pg. 19, 24).

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
16. Scene transition does not go as expected.	**16.** • When using "Picture Wipe/ Dissolve" (☞ pg. 22), there is a delay of a fraction of a second between the previous record stop-point and the Dissolve start-point. This is normal, but this slight delay becomes especially noticeable when shooting a fast-moving subject or during rapid panning.	**16.** ——
17. The Video Echo mode does not work.	**17.** • The Picture Wipe or Dissolve functions are in use. • The Squeeze mode is selected in the Mode Menu. • A Fade-In or Fade-Out is in progress.	**17.** • Make sure the Squeeze mode is set to "OFF" (☞ pg. 18, 19). • Do not try to use the Video Echo mode during a Fade-In or Fade-Out (☞ pg. 24).
18. Even when Slow Shutter is not selected, the image looks like it is activated.	**18.** • When shooting in the dark, the unit becomes highly sensitive to light and the image takes on an effect similar to Slow Shutter.	**18.** • If you want the lighting to look more natural, set GAIN UP to "AGC" or "OFF" in the Mode Menu (☞ pg. 18, 19).
19. There is no strobe when the Classic Film or Strobe mode is activated.	**19.** • The Picture Wipe or Dissolve function is in use.	**19.** • Do not try to use the Classic Film or Strobe mode during a scene transition (☞ pg. 24).
20. White Balance cannot be activated.	**20.** • The Sepia or Monotone mode is activated.	**20.** • Turn off Sepia or Monotone before setting White Balance (☞ pg. 24).
21. When shooting a subject illuminated by bright light, vertical lines appear.	**21.** • This is a result of exceedingly high contrast, and is not a malfunction.	**21.** ——
22. When the screen is under direct sunlight during shooting, the screen becomes red or black for an instant.	**22.** • This is not a malfunction.	**22.** ——
23. During recording, the date/ time does not appear.	**23.** • "DISPLAY" is set to "OFF" in the Date/Time Menu. • Self-Recording is performed.	**23.** • Set "DISPLAY" to "ON" in the Date/Time Menu (☞ pg. 21). • During Self-Recording, the date/time does not appear (☞ pg. 13). • Set "INDICATION" to "ON" in the Date/Time Menu (☞ pg. 21).
24. The indicators and messages do not appear.	**24.** • "ON SCREEN" is set to "OFF" in the Date/Time Menu. • You have made the indicators disappear.	**24.** • Set "ON SCREEN" to "ON" in the Date/Time Menu (☞ pg. 21). • Set "INDICATION" to "ON" in the Date/Time Menu (☞ pg. 21).

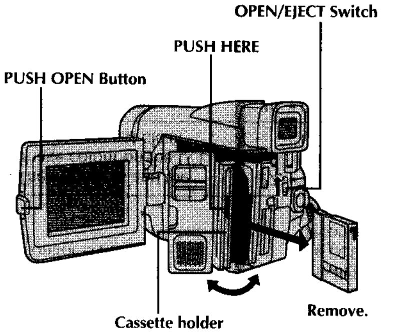
CONTINUED ON NEXT PAGE

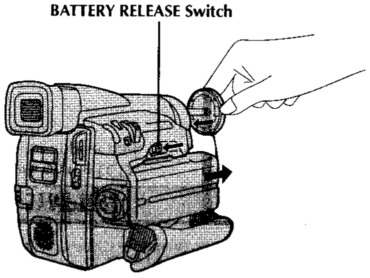
SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
25. Images on the LCD monitor appear dark or whitish.	**25.** • In places subject to low temperature, images become dark due to the characteristics of the LCD monitor. When this happens, the displayed colours differ from those that are actually recorded. This is not a defect of the camcorder. • When the LCD monitor's fluorescent light reaches the end of its service life, images on the LCD monitor become dark. Consult your nearest JVC dealer.	**25.** • Adjust the brightness and angle of the LCD monitor (☞ pg. 12).
26. The rear of the LCD monitor is hot.	**26.** • The light used to illuminate the LCD monitor causes it to become hot.	**26.** • Close the LCD monitor to turn it off or set the Power Switch to "OFF", and let the unit cool down.
27. The indicators and the image colour on the LCD monitor are not clear.	**27.** • This may occur when the surface or the edge of the LCD monitor is pressed.	**27.** —
28. The LCD monitor or viewfinder indications blink.	**28.** • Certain Fade/Wipe effects, certain modes of Programme AE with special effects, "DIS" and other functions that cannot be used together are selected at the same time.	**28.** • Re-read the sections covering Fade/Wipe effects, Programme AE with special effects and "DIS" (☞ pg. 19, 22 – 24).
29. Coloured bright spots appear all over the LCD monitor or the viewfinder.	**29.** • The LCD monitor and the viewfinder are made with high-precision technology. However, black spots or bright spots of light (red, green or blue) may appear constantly on the LCD monitor or the viewfinder. These spots are not recorded on the tape. This is not due to any defect of the unit. (Effective dots: more than 99.99%)	**29.** —
30. During recording, sound cannot be heard.	**30.** • This is normal.	**30.** —
31. Play, Rewind and Fast-Forward functions do not work.	**31.** • The Power Switch is not set to " PLAY ".	**31.** • Set the Power Switch to " PLAY " (☞ pg. 29).
32. The tape is moving, but there is no picture.	**32.** • Your TV has AV input terminals, but is not set to its VIDEO mode. • The cassette's cover is open.	**32.** • Set the TV to the mode or channel appropriate for video playback (☞ pg. 32, 33). • Close the cassette's cover (☞ pg. 9).

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
33. The LCD monitor indications are distorted.	**33.** • During playback of an unrecorded portion, High-speed Search and still playback, LCD monitor indications appear distorted. This is not a defect.	**33.** —
34. Images on the LCD monitor are jittery.	**34.** • The speaker volume is too great.	**34.** • Turn the speaker volume down (☞ pg. 29).
35. The LCD monitor, the viewfinder and the lens have become dirty (ex. fingerprints).	**35.** —	**35.** • Wipe them gently with a soft cloth. Wiping strongly can cause damage.
36. An unusual mark appears.	**36.** —	**36.** • Check the section of the manual that explains LCD monitor/viewfinder indications (☞ pg. 60, 61).
37. An error indication (E01 — E06) appears.	**37.** • A malfunction of some kind has occurred. In this case the camcorder's functions become unusable.	**37.** • Remove the power supply (battery pack, etc.) and wait a few minutes for the indication to clear. When it does, you can resume using the camcorder. If the indication remains even though you repeat the above two or three times, please consult your nearest JVC dealer.
38. The charger indicator on the AC Power Adapter/Charger does not light.	**38.** • The temperature of the battery is extremely high/low. • Charging is difficult in places subject to extremely high/low temperatures.	**38.** • To protect the battery, it is recommended to charge it in places with a temperature of 10°C to 35°C (50°F to 95°F) (☞ pg. 55).
39. The recording mode indicator "LP" blinks.	**39.** • This occurs when recording in the LP mode is not available. After the indicator blinks, the recording mode switches to "SP" and recording goes on.	**39.** —
40. Picture does not appear on the LCD monitor.	**40.** • The lens cap is attached. • The LCD monitor is not open at an angle of over 45 degrees. • The LCD monitor's brightness setting is too dark.	**40.** • Remove the lens cap (☞ pg. 12). • Open the LCD monitor to an angle of over 45 degrees. • Adjust the brightness of the LCD monitor (☞ pg. 12). • If the monitor is tilted upward to 180 degrees, open it fully (☞ pg. 12).
41. When the image is printed from the printer, a black bar appears at the bottom of the screen.	**41.** • This is not a malfunction.	**41.** • By recording with "DIS" activated (☞ pg. 19) this can be avoided.
42. When the camcorder is connected via the DV connector, the camcorder does not operate.	**42.** • The DV cable was plugged/unplugged with power turned on.	**42.** • Turn the camcorder's power off and on again, then operate it.

After Use

1. Turn off the camcorder.
2. Press **PUSH OPEN** and open the LCD monitor. Slide **OPEN/EJECT** in the direction of the arrow, then swing the cassette cover open until it locks. The cassette holder opens automatically. Remove the cassette.
3. Press "PUSH HERE" to close the cassette holder, then close the cassette cover.
4. Close and lock the LCD monitor.
5. Slide **BATTERY RELEASE** and remove the battery pack.
6. Replace the lens cap over the lens.

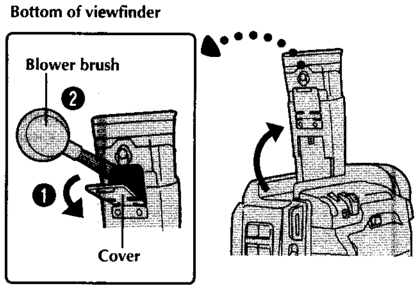




Cleaning The Camcorder

1. To clean the exterior, wipe gently with a soft cloth.
   Put the cloth in diluted mild soap and wring it well to wipe off heavy dirt. Then wipe again with a dry cloth.
2. Open the LCD monitor and wipe gently with a soft cloth. Be careful not to damage the monitor. Close the LCD monitor.
3. To clean the lens, blow it with a blower brush, then wipe gently with lens cleaning paper.
4. To clean the viewfinder, raise it to the vertical position. Carefully lift the plastic tab on the bottom of the viewfinder, and open the cover ❶.
5. Insert a lens blower or soft cloth into the gap at the bottom of the viewfinder and clean the interior of the viewfinder with it ❷.
6. Replace the lens cap, making sure it locks in place. Tilt the viewfinder back to the horizontal position.

NOTES:
- *Avoid using strong cleaning agents such as benzine or alcohol.*
- *Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.*
- *Mould may form if the lens is left dirty.*
- *When using a cleaner or chemically treated cloth refer to the cautions of each product.*

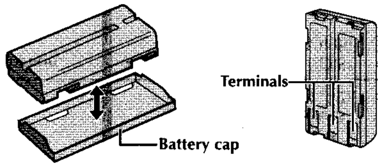


Video Light

DANGER

- The video light can become extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot for some time.
- When operating, keep a distance of about 30 cm between the video light and people or objects.
- Do not use near flammable or explosive materials.
- It is recommended that you consult your nearest JVC dealer for replacing the video light.

Battery Packs



The supplied battery pack is a lithium-ion battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

1. To avoid hazard . . .
.... **do not** burn.
.... **do not** short-circuit the terminals. When transporting, make sure the provided battery cap is attached to the battery. If the battery cap is misplaced, carry the battery in a plastic bag.
.... **do not** modify or disassemble.
.... **do not** expose the battery to temperatures exceeding 60°C, as this may cause the battery to overheat, explode or catch fire.
.... use only specified chargers.

2. To prevent damage and prolong service life . . .
.... **do not** subject to unnecessary shock.
.... charge in an environment where temperatures are within the tolerances shown in the chart below. This is a chemical reaction type battery—cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
.... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
.... fully charge and then fully discharge the battery every 6 months when storing the battery pack over a long period time.
.... remove from charger or powered unit when not in use, as some machines use current even when switched off.

NOTES:
- *It is normal for the battery pack to be warm after charging, or after use.*

Temperature Range Specifications

Charging	10°C to 35°C
Operation	0°C to 40°C
Storage	–10°C to 30°C

- *Recharging time is based on room temperature of 20°C.*
- *The lower the temperature, the longer recharging takes.*

Cassettes

To properly use and store your cassettes, be sure to read the following cautions:

1. During use . . .

.... make sure the cassette bears the Mini DV mark.

.... be aware that recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.

.... make sure the cassette is positioned properly when inserting.

.... do not load and unload the cassette repeatedly without allowing the tape to run at all. This slackens the tape and can result in damage.

.... do not open the front tape cover. This exposes the tape to fingerprints and dust.

2. Store cassettes . . .

.... away from heaters or other heat sources.

.... out of direct sunlight.

.... where they won't be subject to unnecessary shock or vibration.

.... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).

.... vertically, in their original cases.

LCD Monitor

1. To prevent damage to the LCD monitor, DO NOT . . .

.... push it strongly or apply any shocks.

.... place the camcorder with the LCD monitor on the bottom.

2. To prolong service life . . .

.... avoid rubbing it with coarse cloth.

3. Be aware of the following phenomena for LCD monitor use.
These are not malfunctions:

- While using the camcorder, the surface around the LCD monitor and/or the back of the LCD monitor may heat up.
- If you leave power on for a long time, the surface around the LCD monitor becomes hot.

Main Unit

1. For safety, DO NOT . . .

.... open the camcorder's chassis.

.... disassemble or modify the unit.

.... short-circuit the terminals of the battery pack. Keep it away from metallic objects when not in use.

.... allow inflammables, water or metallic objects to enter the unit.

.... remove the battery pack or disconnect the power supply while the power is on.

.... leave the battery pack attached when the camcorder is not in use.

2. Avoid using the unit . . .

.... in places subject to excessive humidity or dust.

.... in places subject to soot or steam such as near a cooking stove.

.... in places subject to excessive shock or vibration.

.... near a television set.

.... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).

.... in places subject to extremely high (over 40°C) or extremely low (under 0°C) temperatures.

3. DO NOT leave the unit . . .

.... in places of over 50°C.

.... in places where humidity is extremely low (below 35%) or extremely high (above 80%).

.... in direct sunlight.

.... in a closed car in summer.

.... near a heater.

4. To protect the unit, DO NOT . . .

.... allow it to become wet.

.... drop the unit or strike it against hard objects.

.... subject it to shock or excessive vibration during transportation.

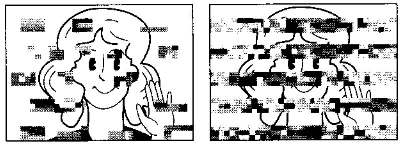
.... keep the lens directed at extremely bright objects for long periods.

.... expose the lens to direct sunlight.

.... carry it by holding the LCD monitor or the viewfinder.

.... swing it excessively when using the shoulder strap or the grip.

5. Dirty heads can cause the following problems:



- No picture during playback.
- Blocks of noise appear during playback.
- During recording, the Head Clog Warning indicator "⊗" appears.

In such cases, use an optional Cleaning Cassette. Insert it and play back. If the cassette is used more than once consecutively, damage to the video heads may result. After the camcorder plays back for about 20 seconds, it stops automatically. Also refer to the Cleaning Cassette's instructions.

If, after using the Cleaning Cassette, the problems still exist, consult your nearest JVC dealer.

Mechanical moving parts used to move the video heads and video tape tend to become dirty and worn out over time. In order to maintain a clear picture at all times, periodic check-ups are recommended after using the unit for about 1,000 hours. For periodic check-ups please consult your nearest JVC dealer.

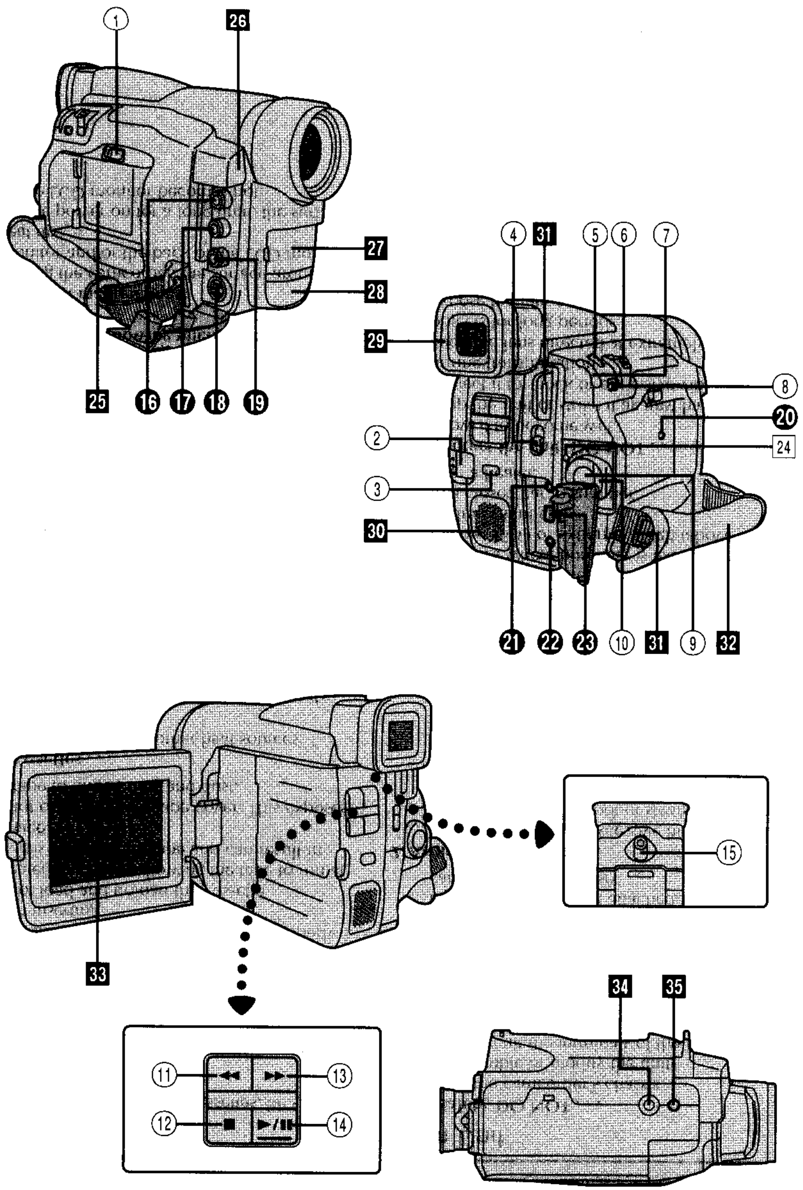
About moisture condensation . . .

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and wait a few minutes and then re-connect it and proceed as usual from the beginning.



Controls

① Battery Release Switch [BATTERY RELEASE] .... ☞ pg. 7

② PUSH OPEN Button .... ☞ pg. 9

③ Video Light Switch [LIGHT OFF/AUTO/ON] (GR-DVL40/DVL30 only) .... ☞ pg. 15

④ OPEN/EJECT Switch .... ☞ pg. 9

⑤ Snapshot Button [SNAPSHOT] .... ☞ pg. 17

⑥ • Power Zoom Lever [T/W] .... ☞ pg. 14
- Speaker Volume Control [VOL.] .... ☞ pg. 29

⑦ • MENU/BRIGHT Dial [+, –, PUSH] .... ☞ pg. 8, 18
- LCD Monitor/Viewfinder Brightness Control .... ☞ pg. 12

⑧ Snapshot Mode Button [MODE] .... ☞ pg. 17

⑨ Recording Start/Stop Button .... ☞ pg. 12

⑩ Power Switch [PLAY, OFF, A, M] ...... ☞ pg. 13

⑪ Rewind Button [REW] .... ☞ pg. 29

⑫ Stop Button [STOP] .... ☞ pg. 29

⑬ Fast-Forward Button [FF] .... ☞ pg. 29

⑭ Play/Pause Button [PLAY/PAUSE] .... ☞ pg. 29

⑮ Dioptre Adjustment Control .... ☞ pg. 11

Connectors

The connectors ⓰ to ㉓ are located beneath a cover.

⓰ Video Output Connector [V] .... ☞ pg. 32

⓱ Audio Output Connector [L] .... ☞ pg. 32

⓲ S-Video Output Connector [S] .... ☞ pg. 32

⓳ Audio Output Connector [R] .... ☞ pg. 32

⓴ DC IN Connector .... ☞ pg. 7

㉑ J Terminal [JLIP (Joint Level Interface Protocol) Connector] .... ☞ pg. 43
- Connect the editing cable when performing Random Assemble Editing (☞ pg. 42 – 47).
- It is used to connect the camcorder to a device such as a personal computer.
  For further details, consult your nearest JVC dealer.
- JLIP-controlled editing from the camcorder to a VCR is not possible if the VCR is not equipped with a J terminal.

㉒ PC Connector .... ☞ pg. 34
It is used to connect the camcorder to the serial port of a personal computer.
For further details, consult your nearest JVC dealer.

㉓ Digital Video Connector [DV OUT] (i.link*) .... ☞ pg. 35, 37
* i.Link refers to the IEEE1394-1995 industry specification and extensions thereof. The i logo is used for products compliant with the i.Link standard.

Indicators

24 Power Lamp .... ☞ pg. 13

Other Parts

25 Battery Pack Mount .... ☞ pg. 7

26 • Camera Sensor
Be careful not to cover this area; a sensor necessary for shooting is built-in here.
- Remote Sensor .... ☞ pg. 38

27 Video Light (GR-DVL40/DVL30 only) ... ☞ pg. 15

28 Stereo Microphone .... ☞ pg. 48

29 Viewfinder .... ☞ pg. 11

30 Speaker .... ☞ pg. 29

31 Shoulder Strap Eyelets .... ☞ pg. 11

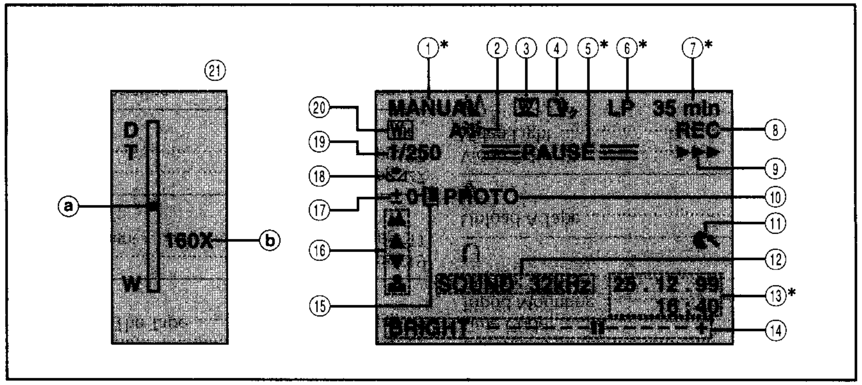
32 Grip Strap .... ☞ pg. 11

33 LCD Monitor .... ☞ pg. 12

34 Tripod Mounting Socket .... ☞ pg. 11

35 Stud Hole .... ☞ pg. 11

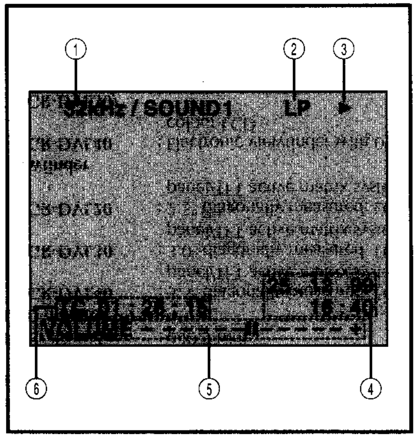
LCD Monitor/Viewfinder Indications During Recording



No.	Function
①*	Displays the operation mode position. (☞ pg. 13)
②	Appears when Auto Slow Shutter is engaged ("GAIN UP" is set to "AUTO"). (☞ pg. 19)
③	Appears when in the Squeeze or Cinema mode. (☞ pg. 19)
④	Appears when Digital Image Stabiliser ("DIS") is engaged. (☞ pg. 19)
⑤*	Appears when in the Record-Standby mode. (☞ pg. 12)
⑥*	Displays the recording mode (SP or LP). (☞ pg. 10)
⑦*	Displays the tape remaining time. (☞ pg. 12)
⑧	Appears during recording. (☞ pg. 12)
⑨	Appears while the tape is running. (☞ pg. 12)
⑩	Appears when taking a Snapshot. (☞ pg. 17)
⑪	Appears when the wind cut mode is engaged to cut down on noise created by wind. (☞ pg. 20)
⑫	Displays the sound mode for approx. 5 seconds after turning on the camcorder. (☞ pg. 20)
⑬*	Displays the date/time. (☞ pg. 21)
⑭	Displays the brightness of the LCD monitor. (☞ pg. 12)
⑮	Appears when the iris is locked. (☞ pg. 27)
⑯	Appears when the focus is adjusted manually. (☞ pg. 25)
⑰	Appears when the exposure is adjusted. (☞ pg. 26)
⑱	Appears when the white balance is adjusted. (☞ pg. 28)
⑲	Displays the selected Programme AE with special effects. (☞ pg. 24)
⑳	Displays the selected Fade/Wipe effect. (☞ pg. 22)
㉑	Appears during zooming. (☞ pg. 14) ⓐ Zoom level indicator ⓑ Approximate zoom ratio

* :Setting "INDICATION" to "OFF" in the Date/Time Menu lets you remove indications marked with * from the screen (☞ pg. 21).

LCD Monitor/Viewfinder Indications During Playback



No.	Function
①	Displays the sound mode. (☞ pg. 31)
②	Displays the tape speed.
③	Appears while a tape is running. ▶ : Playback ▶▶ : Fast-Forward/Shuttle search ◀◀ : Rewind/Shuttle search ❚❚ : Pause ❚❚▶ : Forward slow-motion ◀❚❚ : Reverse slow-motion ⊖ : Audio Dubbing ❚❚⊖ : Audio Dubbing Pause
④	Displays the date/time. (☞ pg. 31)
⑤	BRIGHT: Displays the brightness of the LCD monitor. (☞ pg. 12) VOLUME: Displays the speaker volume. (☞ pg. 29)
⑥	Displays the time code. (☞ pg. 31)

Warning Indications

Indications	Function
🔋	Displays the battery remaining power. Remaining power level: high → ▮▮▮ → ▮▮ → ▮ → ▭ Remaining power level: exhausted As the battery power comes close to nil, the battery indicator ▭ blinks. When the battery power is exhausted, power turns off automatically.
📼	Appears when no tape is loaded, or when the erase protection tab is set to "SAVE". (☞ pg. 9)
⊗	Appears if dirt is detected on the heads during recording. (☞ pg. 56)
💧	Appears if condensation occurs. When this indication is displayed, the camcorder turns off automatically.
TAPE!	Appears for 10 seconds after power is turned on if there is no tape loaded.
LENS COVER	Appears for 5 seconds after power is turned on if the lens cap is attached.
TAPE END	Appears when the tape ends during recording or playback. (☞ pg. 13)
SET DATE/TIME!	• Appears when the date/time is not set. (☞ pg. 8) • Appears when the clock (lithium) battery is discharged and the previously set date/time is erased. (☞ pg. 8)
ERROR! REFER MANUAL	Appears when Audio Dubbing is unavailable. (☞ pg. 48)
E01 — E06	The error indications (E01 — E06) show what type of malfunction has occured. When an error indication appears, the camcorder turns off automatically. Remove the power supply (battery, etc.) and wait a few minutes for the indication to clear. When it does, you can resume using the camcorder. If the indication remains, consult your nearest JVC dealer. (☞ pg. 53)

INDEX Terms

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Zooming ☞ pg. 14

SPECIFICATIONS

Camcorder

General

Power supply : DC 6.3 V⎓ (Using AC Power Adapter/Charger)
DC 7.2 V⎓ (Using battery pack)

Power consumption
LCD monitor off, viewfinder on
GR-DVL40 : Approx. 4.7 W
GR-DVL30/DVL20 : Approx. 4.6 W
LCD monitor on, viewfinder off
GR-DVL40 : Approx. 5.8 W
GR-DVL30 : Approx. 5.7 W
GR-DVL20 : Approx. 5.6 W
Video light (GR-DVL40/DVL30 only) : Approx. 3.6 W

Format : DV Format (SD mode)
Signal format : PAL Standard
Video signal recording format : Digital Component Recording
Cassette : Mini DV Cassette
Tape Speed : **SP** : 18.8 mm/s
LP : 12.5 mm/s
Maximum recording time : **SP** : 60 min.
LP : 90 min.
(using M-DV60ME cassette)
Pickup : 1/4" CCD
Lens : F 1.6, f = 3.9 to 62.4 mm, 16:1 Power Zoom Lens
Filter diameter : ø40.5 mm
LCD monitor
GR-DVL40 : 3.5" diagonally measured, LCD panel/TFT active matrix system
GR-DVL30 : 3.0" diagonally measured, LCD panel/TFT active matrix system
GR-DVL20 : 2.5" diagonally measured, LCD panel/TFT active matrix system
Viewfinder
GR-DVL40 : Electronic viewfinder with 0.55" colour LCD
GR-DVL30/DVL20 : Electronic viewfinder with 0.24" black/white LCD
Speaker : Monaural
Operating temperature : 0°C to 40°C
Operating humidity : 35% to 80%
Storage temperature : –20°C to 50°C
Dimensions : 188 (W) x 118 (H) x 88 (D) mm (with the LCD monitor closed and the viewfinder pushed down)
Weight
GR-DVL40/DVL30 : Approx. 700 g
GR-DVL20 : Approx. 690 g

Connectors

S-Video : **Y** : 1 Vp-p, 75 Ω, analogue output
C : 0.29 Vp-p, 75 Ω, analogue output
JLIP : ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
PC : ø2.5 mm, 3-pole
Video output : 1 Vp-p, 75 Ω unbalanced, analogue output
Audio output : –8 dBs, 1 kΩ analogue output, stereo
DV output : 4-pin, IEEE1394 compliant

AC Power Adapter/Charger AA-V20EG or AA-V20EK

Power requirement : AC 110 V to 240 V∿, 50/60 Hz
Power consumption : 23 W
Output
Charge : DC 7.2 V⎓, 0.63 A
VTR : DC 6.3 V⎓, 1.8 A
Dimensions : 68 (W) x 38 (H) x 110 (D) mm
Weight
AA-V20EG : Approx. 255 g
AA-V20EK : Approx. 330 g

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

SECTION 1
DISASSEMBLY

1.1 BEFORE ASSEMBLY AND DISASSEMBLY

1.1.1 Precautions

1. Be sure to remove the power supply unit prior to mounting and soldering of parts.
2. When connecting and disconnecting the connectors, be careful not to damage the wire.
3. When replacing chip parts (especially IC parts), desolder completely first (to prevent peeling of the pattern).
4. Tighten screws properly during the procedures.
   Unless specified otherwise, tighten screws at a torque of 0.2N·m (2.0kgf·cm).

1.1.2 Assembly and disassembly

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	UPPER CASE(2)	Fig.1-3-2	2(S1), (L1), (L2)	NOTE ①-1
②	UPPER CASE(1)	Fig.1-3-3	(S1), (L3)	NOTE ②-1 NOTE ②-2 NOTE ②-3
③	TOP COVER	Fig.1-3-4	(S1), 2(S2), (L1), (L4), 2(L5)	NOTE ③-1 NOTE ③-2 NOTE ③-3

↑ ↑ ↑ ↑ ↑

(1) (2) (3) (4) (5)

(1) Indicate the disassembly steps. When assembling, perform in the reverse order of these steps. This number corresponds to the number in the disassembly diagram.

(2) Indicates the name of disassembly/assembly parts.

(3) Indicates the number in the disassembly diagram.

(4) Indicates parts and points such as screws, washers, springs which must be removed during disassembly/ assembly.
P = Spring
W = Washer
S = Screw
Lock (L), soldering (SD), shield, connector, etc.

[Example]
- Remove (W1) = Washer W1.
- Remove (SD1) = Soldering at the point SD1.
- Connector Ⓐ = Disconnector the connector Ⓐ.

(5) Precautions on disassembly/assembly.

1.1.3 Disconnection of Connectors (Wires)

Connector
Pull both ends of the connector in the arrow direction, remove the lock and disconnect the flat wire.

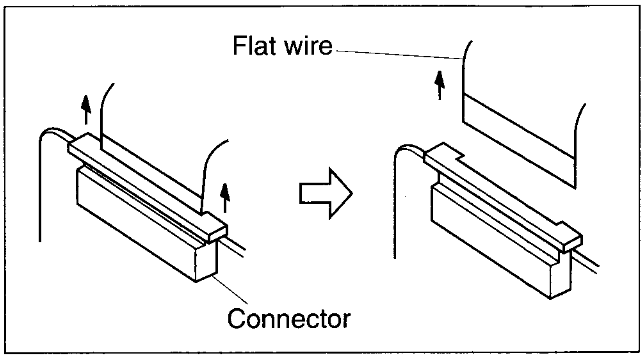


Fig. 1-1-1 Connector 1

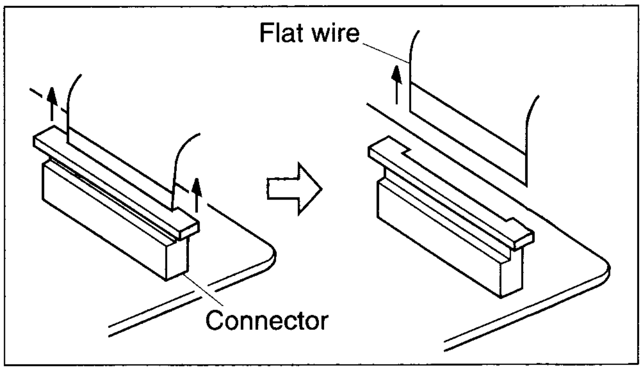


Fig. 1-1-2 Connector 2

Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.

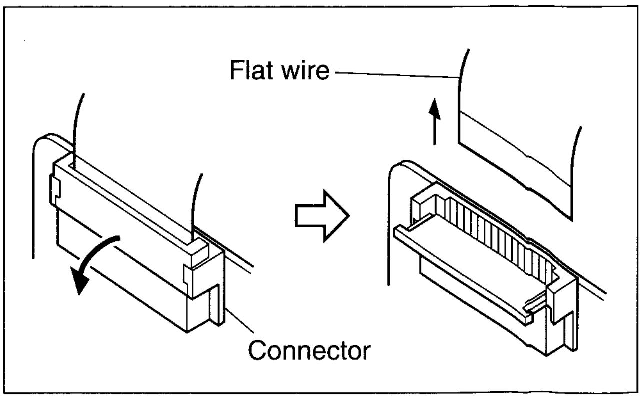


Fig. 1-1-3 Connector 3

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to those shown in figures of this section "Disassembly".

Note: *Screw that are asterisked (marked with ∗) in the shape column are fixed with screw lock agent. If such the screw in once removed, never used it again.*

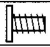
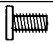
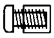
SYMBOL	SHAPE	PARTS NO.	COLOR
(S1)		QYSLSF2055D	BLACK
(S2)		LY30018-084A	BLACK
(S3)		QYSLSF2090D	BLACK
(S4)		LY30018-044A	BLACK
(S5)		YQ43762-5	GOLD
(S6)		LY30018-050A	GOLD
(S7)	∗	LY30018-089A	GOLD
(S8)		YQ43893-3	SILVER
(S9)		LY30018-024A	BLACK
(S10)		LY30019-014A	GOLD
(S11)		LY30018-072A	GOLD
(S12)		QYSPSGU2080Z	GOLD
(S13)		PTY30151-016	SILVER
(S14)		QYSLSP2040D	BLACK
(S15)		QYSPSPT1750D	BLACK
(S16)	∗	LY30018-038A	BLACK
(S17)	 ∗	LY30018-090A	GOLD
(S18)		QYSPSGT1735Z	GOLD
(S19)		LY30018-058A	SILVER
(S20)		LY30018-079A	BLACK
(S21)		LY30018-023A	BLACK

Table 1-1-1

1.2 TOOLS AND EQUIPMENTS REQUIRED FOR ADJUSTMENTS

1.2.1 Tools required for adjustments

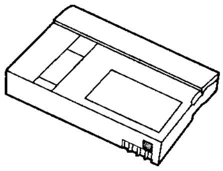
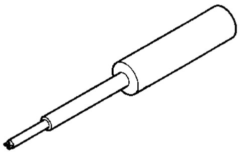
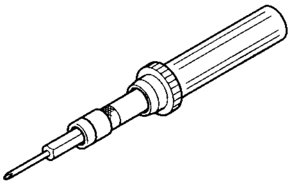
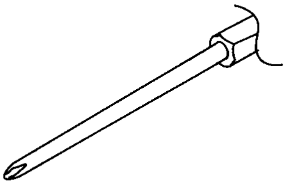
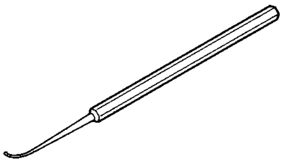
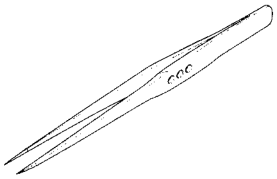
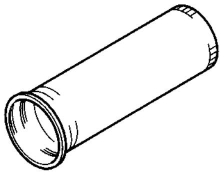
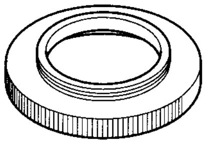
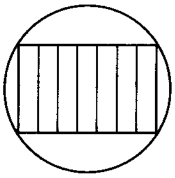
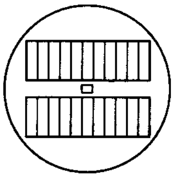
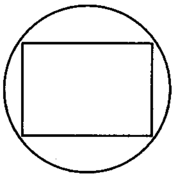
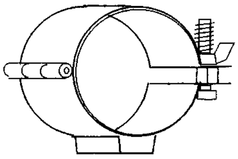
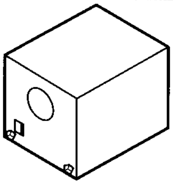
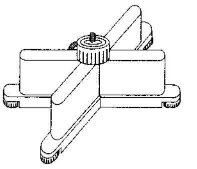
1 ALIGNMENT TAPE MC-2	2 GUIDE DRIVER YTU94148A
	
3 TORQUE DRIVER YTU94088	4 BIT YTU94088-003
	
5 CHIP IC REPLACEMENT JIG PTS40844-2	6 TWEEZERS YTU94094
	
7 INF ADJUSTMENT LENS YTU92001B	8 CONN. RING YTU92001-111
	
9 COLOR BAR CHART YTU92001-051	10 GRAY SCALE CHART YTU92001-052
	
11 WHITE BALANCE CHART YTU92001-053	12 INF LENS HOLDER YTU94087
	
13 LIGHT BOX YTU93072A-1	14 CAMERA STAND YTU93079
	

Table 1-2-1 (A)

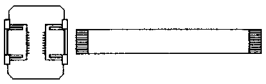
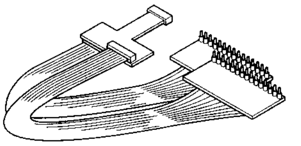
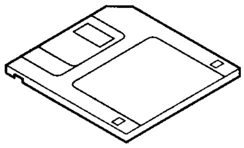
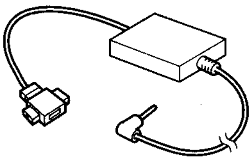
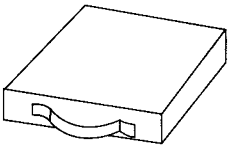
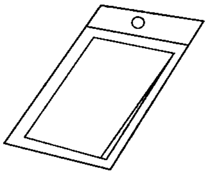
15 PATCH CORD YTU93101A	16 JIG CONNECTOR CABLE YTU93082C
	
17 SERVICE SUPPORT SYSTEM YTU94057-41	18 PC CABLE QAM0099-002
	
19 SOLDERING KIT YTU96016C	CLEANING CLOTH KSMM-01
	

Table 1-2-1 (B)

1. Alignment tape
   To be used for check and adjustment of interchangeability of the mechanism.

2. Guide driver
   To be used to turn the guide roller to adjustment of the linarity of playback envelope.

3. Torque driver
   Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.

4. Bit
   This bit is slightly longer than those set in conventional torque drivers.

5. Chip IC replacement jig
   To be used for replacing chip IC"s and other chip parts.

6. Tweezers
   To be used for replacing chip parts e.t.c.

7. INF adjustment lens
   To be used for adjustment of the camera system.

8. Conn. ring
   The connector ring to attach the INF. lens to the head of the OP lens.

9. Color bar chart
   To be used for adjustment of the camera system.

10. Gray scale chart
    To be used for adjustment of the camera system.

11. White balance chart
    To be used for adjustment of the camera system.
    (for white balance adjustment)

12. INF lens holder
    To be used together with the camera stand (11) for operating the VideoMovie in the stripped-down condition such as the status without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring.

13. Light box
    To be used for adjustment of the camera system.

14. Camera stand
    To be used together with the INF adjustment lens holder.

15. Patch cord
    To be used to connect electrical parts, P.C. boards, etc. for servicing.

16. Jig connector cable
    Connected to CN105 of the main board and used for measuring error rates, etc.

17. Service support system
    To be used for adjustment with a personal computer.

18. PC cable
    To be used to connect the VideoMovie and a personal computer with each other when a personal computer is used for adjustment.

19. Soldering kit
    Thin head is made so that it can be inserted into small spaces.

20. Cleaning cloth
    Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

1.2.2 Equipments required for adjustments

1. Parsonal computer (For Windows)
2. Color TV monitor
3. Oscilloscope (dual-trace type, for more than 100 MHz).
4. DIGITAL BOLT meter
5. DC power supply
6. Frequency counter
7. AC Power Adapter/DC Cord

1.3 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and board assembly in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.

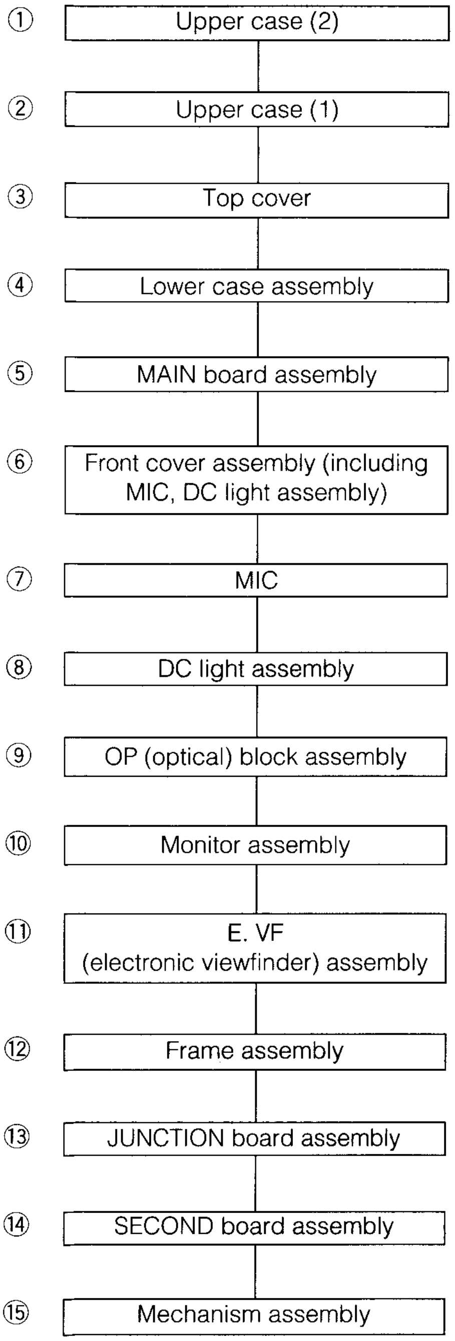

① Upper case (2)
② Upper case (1)
③ Top cover
④ Lower case assembly
⑤ MAIN board assembly
⑥ Front cover assembly (including MIC, DC light assembly)
⑦ MIC
⑧ DC light assembly
⑨ OP (optical) block assembly
⑩ Monitor assembly
⑪ E. VF (electronic viewfinder) assembly
⑫ Frame assembly
⑬ JUNCTION board assembly
⑭ SECOND board assembly
⑮ Mechanism assembly

Fig. 1-3-1

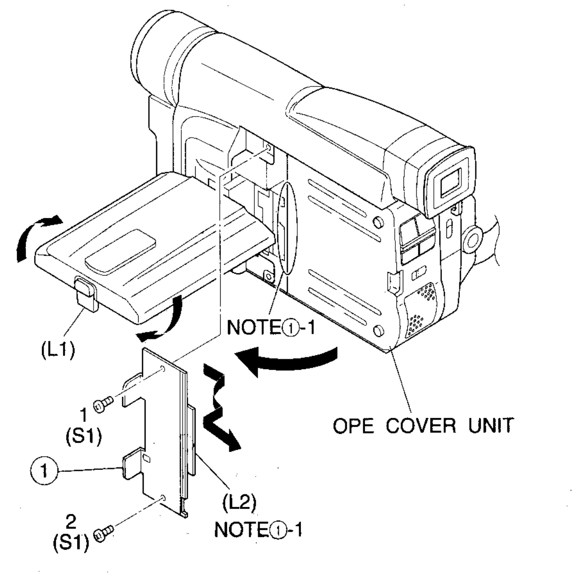
1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	UPPER CASE(2)	Fig.1-3-2	2(S1), (L1), (L2)	NOTE ①-1
②	UPPER CASE(1)	Fig.1-3-3	(S1), (L3)	NOTE ②-1 NOTE ②-2 NOTE ②-3
③	TOP COVER	Fig.1-3-4	(S1), 2(S2), (L1), (L4), 2(L5)	NOTE ③-1 NOTE ③-2 NOTE ③-3
④	LOWER CASE ASSY	Fig.1-3-5	6(S1), 3(S2), (S3), (L6), (L7) (L8) CN Ⓐ COVER (JACK), LENS CAP	NOTE ④-1 NOTE ④-2 NOTE ④-3 NOTE ④-4 NOTE ④-5
⑤	MAIN BOARD ASSY	Fig.1-3-6	3(S1), (S4), CN Ⓑ, Ⓒ, Ⓓ, Ⓔ, Ⓕ, Ⓖ, Ⓗ REAR COVER	NOTE ⑤-1 NOTE ⑤-2 NOTE ⑤-3
⑥/⑦/⑧	FRONT COVER ASSY (INCL. MIC/DC LIGHT ASSY)	Fig.1-3-7	(S1), (S5), (L9), (L10)	NOTE ⑦-1 NOTE ⑧-1
⑦/⑧	MIC/DC LIGHT ASSY	Fig.1-3-8	(S1), (L11), (L12)	NOTE ⑧-1
⑨	OP BLOCK ASSY	Fig.1-3-9	2(S6)	NOTE ⑨-1
⑩	MONITOR ASSY	Fig.1-3-10	3(S1), (L1)	NOTE ⑩-1 NOTE ⑩-2
⑪	E.VF ASSY	Fig.1-3-11	2(S1), (S7)	NOTE ⑪-1 NOTE ⑪-2
⑫	FRAME ASSY	Fig.1-3-12	4(S1), (L4) CN Ⓚ	NOTE ⑫-1 NOTE ⑫-2
⑬	JUNCTION BOARD ASSY	Fig.1-3-13	(S8), (S9), (L13), (L14) CN Ⓛ, Ⓜ, Ⓝ, Ⓞ	NOTE ⑬-1 NOTE ⑬-2
⑭	SECOND BOARD ASSY	Fig.1-3-14	(S8), (L15), (L16), (L17), (L18) CN Ⓟ, Ⓠ, Ⓡ	–
⑮	MECHANISM ASSY	Fig.1-3-15	2(S10), HOLDER	–

List of Abbreviations: (S1)=Screw (S1)
2(L4)=2 Locking Tabs (L4)

Table 1-3-1

① Upper case (2)

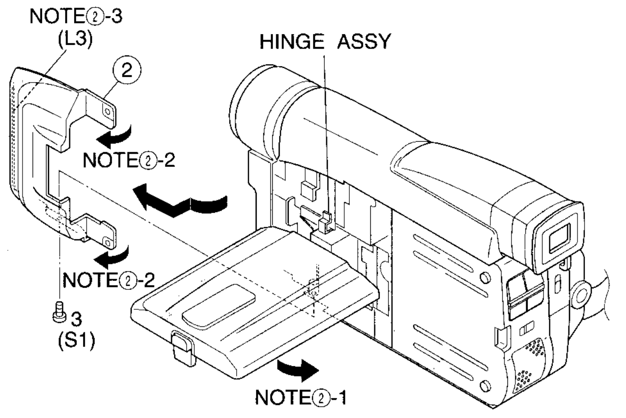


(L1)
NOTE①-1
OPE COVER UNIT
1
(S1)
①
2
(S1)
(L2)
NOTE①-1

Note ①-*1: When reinstalling, insert (L2) inside the OPE. cover unit.*

Fig. 1-3-2

② Upper case (1)



NOTE②-3
(L3)
HINGE ASSY
②
NOTE②-2
NOTE②-2
3
(S1)
NOTE②-1

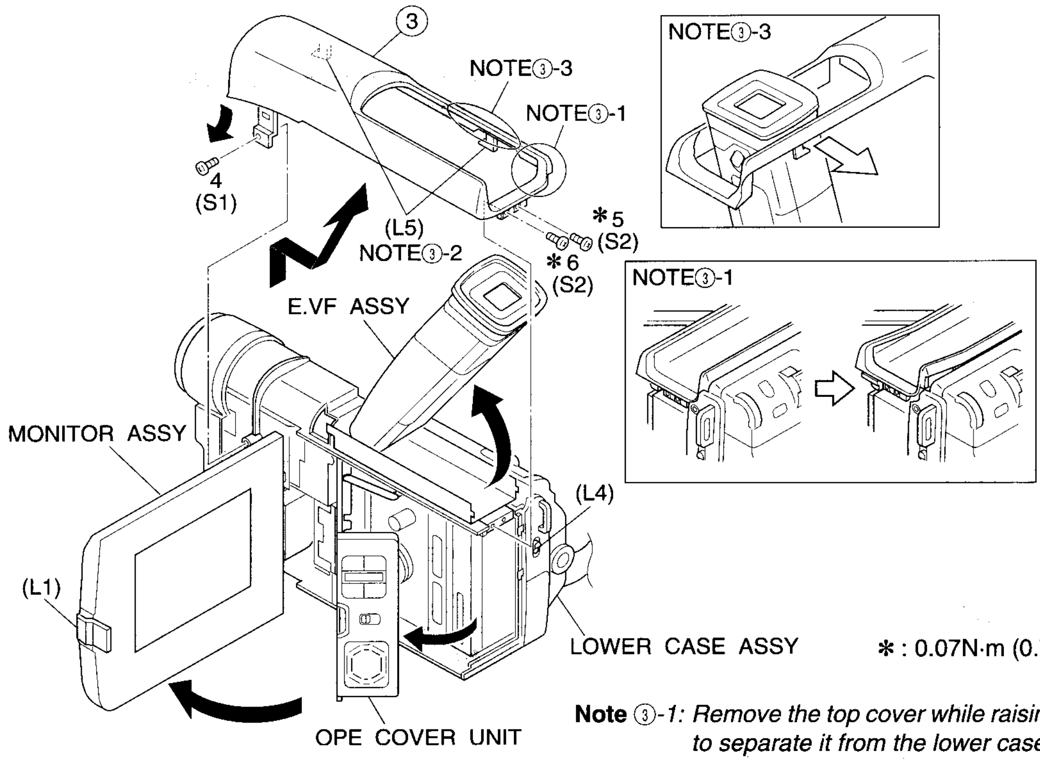
Note ②-*1: When removing/reinstalling, slightly tilt the monitor assembly.*

Note ②-*2: When dismantling, spread the upper case (1) slightly outwards not to get it touching the hinge assembly.*

Note ②-*3: When reassembling the upper case (1) to the main frame, set (L3) inside the front cover assembly.*

Fig.1-3-3

③ Top cover



③
NOTE③-3
NOTE③-1
4
(S1)
(L5)
NOTE③-2
*5
(S2)
*6
(S2)
E.VF ASSY
MONITOR ASSY
(L4)
(L1)
LOWER CASE ASSY
OPE COVER UNIT
NOTE③-3
NOTE③-1

*: 0.07N·m (0.7kgf·cm)

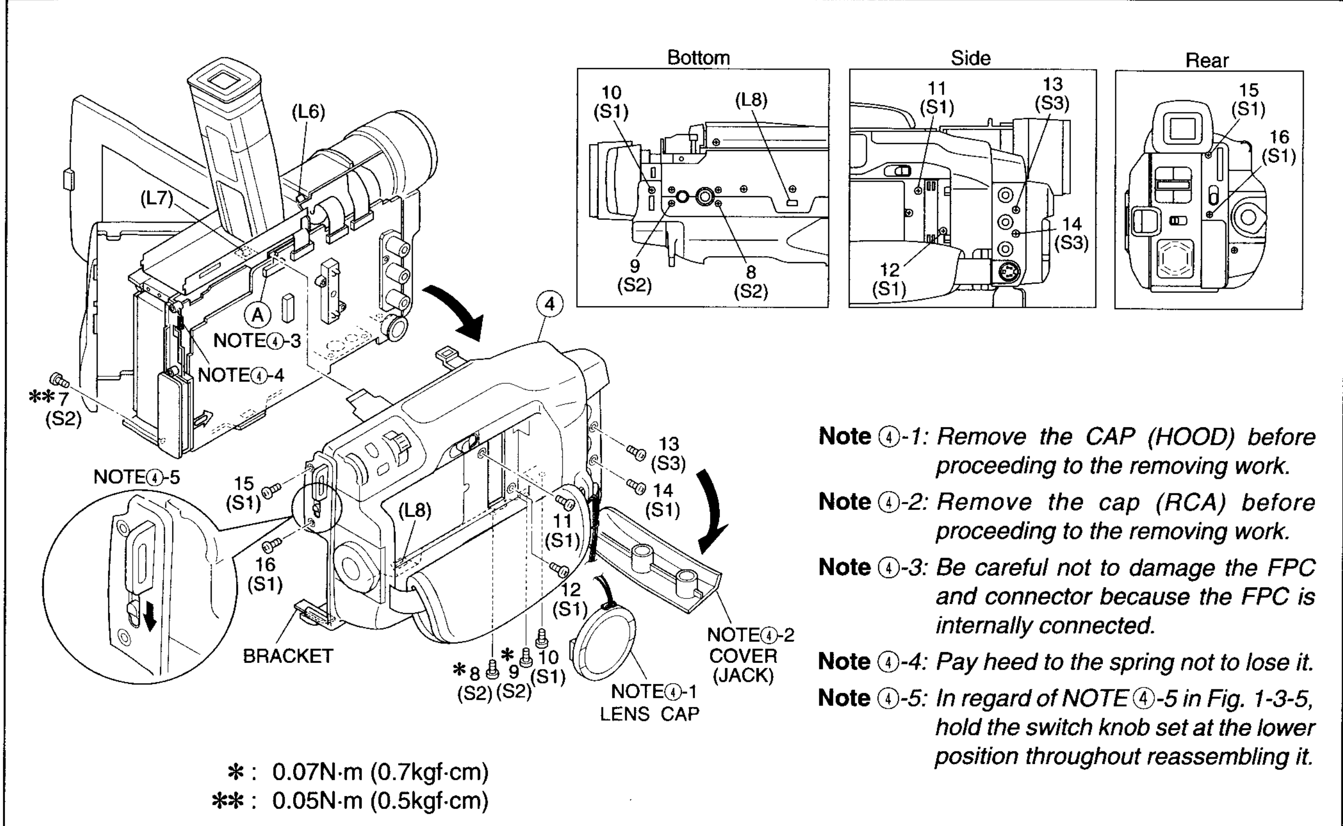
Note ③-*1: Remove the top cover while raising its rear end to separate it from the lower case assembly.*

Note ③-*2: When dismantling, pay heed to the hook (L5) not to damage it.*

Note ③-*3: When drawing the top cover out of the E. VF assembly, spread the frame slightly outwards with care not to damage any part.*

Fig. 1-3-4

④ Lower case assembly


Bottom
10
(S1)
(L8)
9
(S2)
8
(S2)
Side
11
(S1)
13
(S3)
14
(S3)
12
(S1)
Rear
15
(S1)
16
(S1)
(L6)
(L7)
Ⓐ
NOTE④-3
NOTE④-4
**7
(S2)
NOTE④-5
15
(S1)
16
(S1)
(L8)
11
(S1)
12
(S1)
13
(S3)
14
(S1)
④
BRACKET
*8
9
(S2) (S2)
*10
(S1)
NOTE④-1
LENS CAP
NOTE④-2
COVER
(JACK)

*: 0.07N·m (0.7kgf·cm)
**: 0.05N·m (0.5kgf·cm)

Note ④-*1: Remove the CAP (HOOD) before proceeding to the removing work.*

Note ④-*2: Remove the cap (RCA) before proceeding to the removing work.*

Note ④-*3: Be careful not to damage the FPC and connector because the FPC is internally connected.*

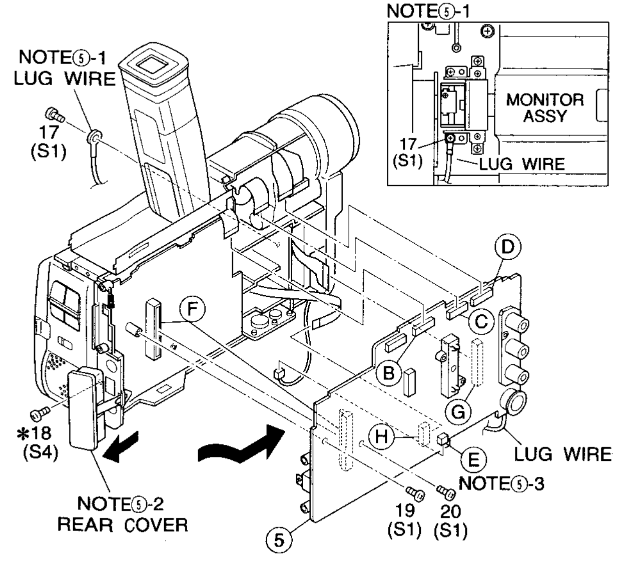
Note ④-*4: Pay heed to the spring not to lose it.*

Note ④-*5: In regard of NOTE ④-5 in Fig. 1-3-5, hold the switch knob set at the lower position throughout reassembling it.*

Fig. 1-3-5

⑤ MAIN board assembly

*: 0.07N·m (0.7kgf·cm)


NOTE⑤-1
NOTE⑤-1
LUG WIRE
17
(S1)
MONITOR
ASSY
17
(S1)
LUG WIRE
Ⓓ
Ⓕ
Ⓒ
Ⓑ
Ⓖ
Ⓗ
Ⓔ
LUG WIRE
NOTE⑤-3
*18
(S4)
NOTE⑤-2
REAR COVER
⑤
19
(S1)
20
(S1)

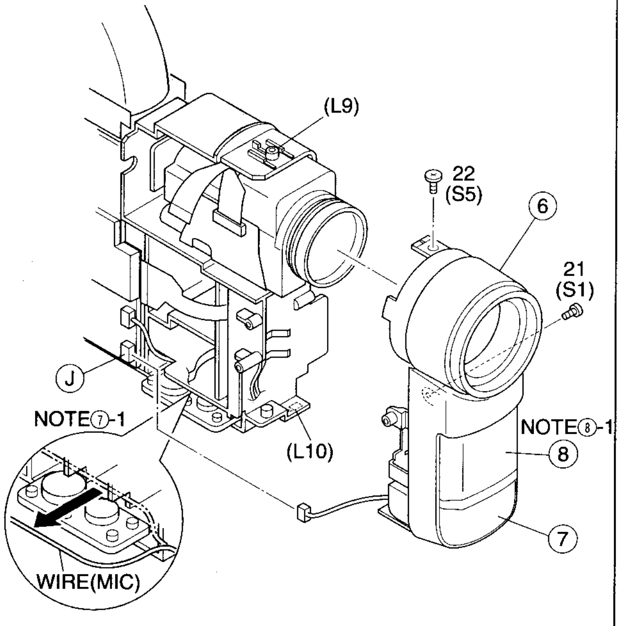
Note ⑤-*1: Remove the lug wire fastened together with the bracket (monitor).*

Note ⑤-*2: Remove the cap (rear jack) before proceeding to the removing work.*

Note ⑤-*3: DC light assembly (in the GR-DVL30/DVL40).*

Fig. 1-3-6

⑥ Front cover assembly (including ⑦ MIC / ⑧ DC light assembly)

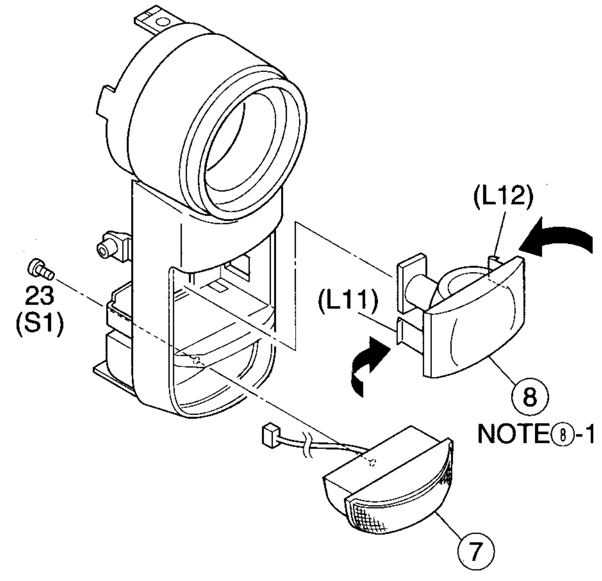

(L9)
22
(S5)
⑥
21
(S1)
Ⓙ
NOTE⑦-1
(L10)
NOTE⑧-1
⑧
⑦
WIRE(MIC)

Note ⑦-*1: When reassembling, set the microphone wire in the groove (gap) between the frame and base.*

Note ⑧-*1: DC light assembly (in the GR-DVL30/DVL40).*

Fig. 1-3-7

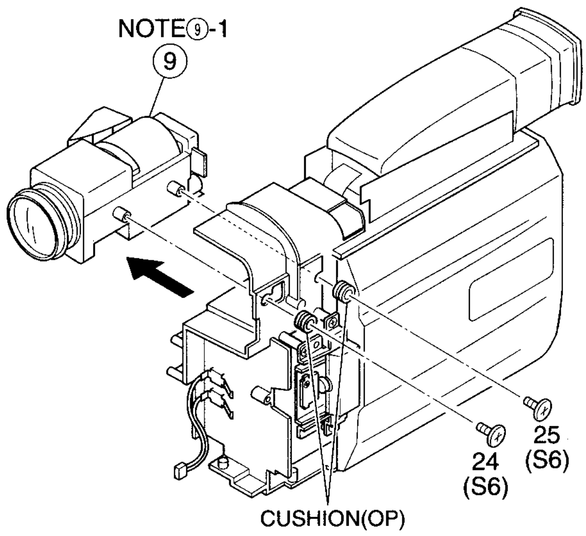
⑦ MIC / ⑧ DC light assembly


(L12)
23
(S1)
(L11)
⑧
NOTE⑧-1
⑦

Note ⑧-*1: DC light assembly (in the GR-DVL30/DVL40)*

Fig. 1-3-8

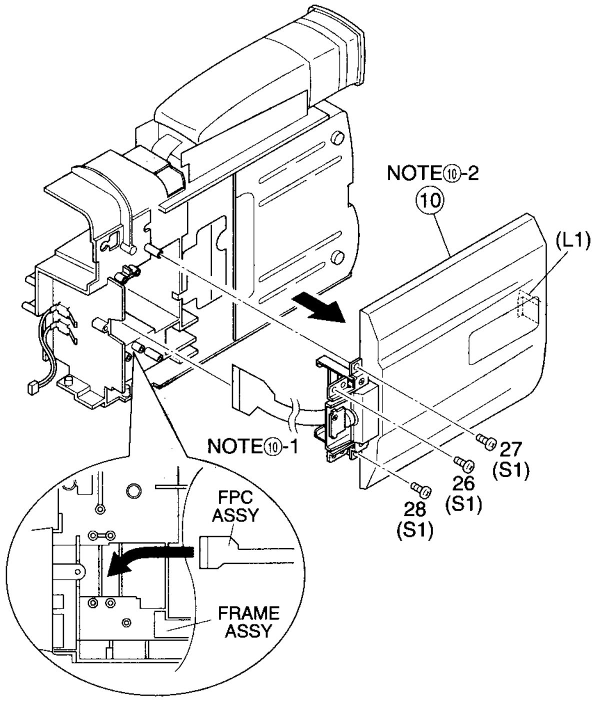
⑨ OP (optical) block assembly


NOTE⑨-1
⑨
25
24
(S6)
(S6)
CUSHION(OP)

Note ⑨-*1: For disassembling the OP block Assembly, refer to "1-4 DISASSEMBLY/ASSEMBLY OF OP BLOCK ASSEMBLY"*

Fig. 1-3-9

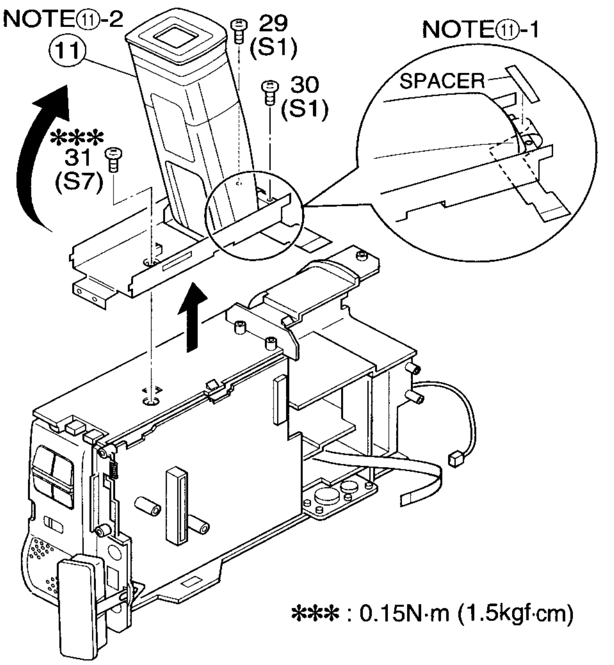
⑩ Monitor assembly


NOTE⑩-2
⑩
(L1)
NOTE⑩-1
27
(S1)
26
(S1)
28
(S1)
FPC
ASSY
FRAME
ASSY

Note ⑩-*1: Bay head to the FPC wire not to damage it.*
Note ⑩-*2: For disassembling the Monitor assembly, refer to "1.5 DISASSEMBLY/ASSEMBLY OF MONITOR ASSEMBLY"*

Fig. 1-3-10

⑪ E. VF (electronic viewfinder) assembly

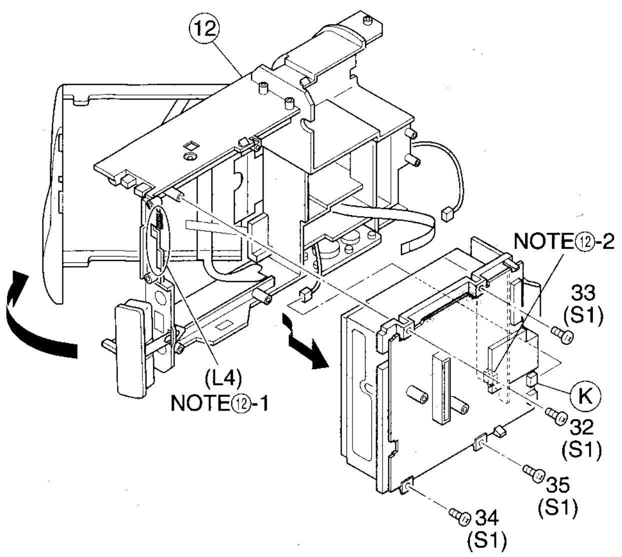

NOTE⑪-2
⑪
29
(S1)
30
(S1)
NOTE⑪-1
SPACER
***
31
(S7)

*** : 0.15N·m (1.5kgf·cm)

Note ⑪-*1: When removing, remove the spacer first and the screws next.*
Note ⑪-*2: For disassembly the E. VF assembly, refer to "1.6 E. VF DISASSEMBLY/ASSEMBLY OF E. VF ASSEMBLY"*

Fig. 1-3-11

⑫ Frame assembly

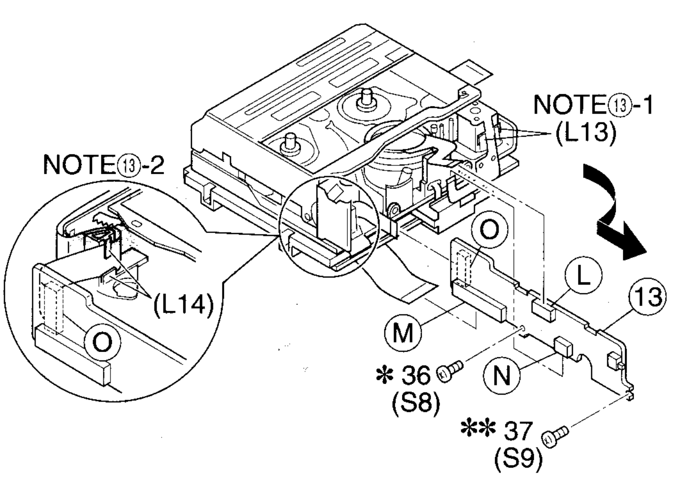

⑫
NOTE⑫-2
33
(S1)
K
32
(S1)
35
(S1)
34
(S1)
(L4)
NOTE⑫-1

Note ⑫-*1: Pay heed to the spring not to lose it.*

Note ⑫-*2: Pay to the switch not to damage it.*

Fig. 1-3-12

⑬ JUNCTION board assembly


NOTE⑬-1
(L13)
NOTE⑬-2
(L14)
O
O
L
⑬
M
✱ 36
(S8)
N
✱✱ 37
(S9)

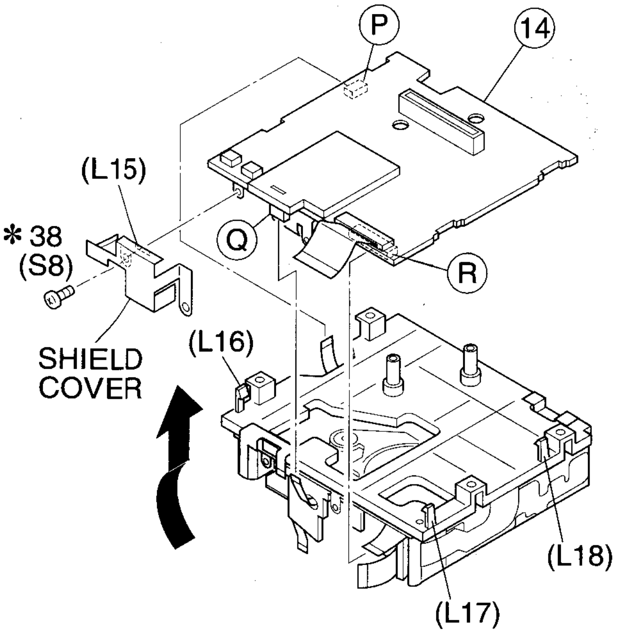
✱ : 0.07N·m (0.7kgf·cm)
✱✱ : 0.05N·m (0.5kgf·cm)

Note ⑬-*1: When reassembling secure the FPC with the hook of the motor bracket.*

Note ⑬-*2: When reassembling, secure the FPC with the hook of the catcher (T) assembly.*

Fig. 1-3-13

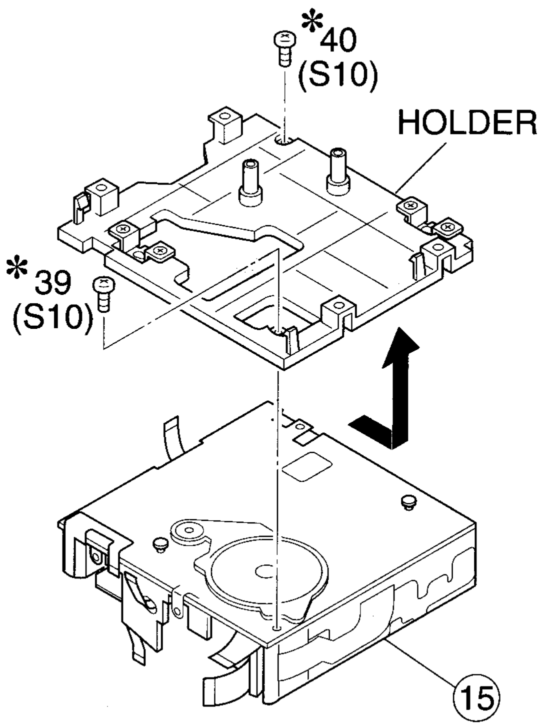
⑭ SECOND board assembly


P
⑭
(L15)
✱ 38
(S8)
Q
R
SHIELD COVER
(L16)
(L18)
(L17)

✱ : 0.07N·m (0.7kgf·cm)

Fig. 1-3-14

⑮ Mechanism assembly


✱40
(S10)
HOLDER
✱39
(S10)
⑮

✱ : 0.07N·m (0.7kgf·cm)

Fig. 1-3-15

1.4 DISASSEMBLY/ASSEMBLY OF OP BLOCK

1.4.1 Precautions

1. Throughout disassembly/assembly of the OP block assembly, pay careful attention to the CCD image sensor, optical LPF, lens and so on not to damage or soil them, particularly to their respective surfaces so as to prevent them from getting dust, soiled or scratched. If some of them is soiled with a fingerprint, etc., wipe it out with silicone paper, clean chamois, cleaning cloth, or the like.
2. The spare CCD image sensor is occasionally shipped from the factory as the protection seal is stuck onto its transparent glass. If so, leave the protection seal as it is and remove it just before assembling the new CCD image sensor to the OP block assembly.

1.4.2 Disassembly

1. Unsolder the CCD board assembly by 14 terminals (SD1).
2. Remove one screw (1) and then remove the CCD board assembly.

Note *1: If the CCD board assembly is removed together with the CCD base assembly, it is not required to remove the screw (1).*

3. Remove two screws (2, 3) and then remove the CCD base assembly.

Note *2: When removing the CCD base assembly, pay heed to the spacer rubber and optical LPF, for they are also removed together with the CCD image sensor.*

Note *3: Replace the CCD image sensor as it is mounted on the CCD base assembly. In other words, remove the old CCD image sensor from the CCD base assembly and mount a new CCD image sensor on it.*

4. Remove the CCD spacer, optical LPF and spacer rubber.

1.4.3 Assembly

1. As the optical LPF is fitted with the spacer rubber, set it in the holder located in the center of the lens of the OP block assembly.

Note *4: When mounting the optical LPF, pay heed to its orientation because it has different surfaces in the front and back sides.*

2. Making sure that the spacer rubber and optical LPF are positioned right, mount the CCD spacer and CCD base assembly and fasten them with two screws.
3. Mount the CCD board assembly and fasten it with one screw.
4. Solder 14 terminals (SD1) of the CCD base assembly.

1.4.4 Replaceable parts of OP block assembly

Besides the CCD image sensor, replaceable parts for servicing the OP block assembly are as follows.

- Focus motor
- Zoom motor
- Iris motor unit

Note *5: The iris motor unit includes one FPC assembly and two sensors.*

Note *6: Throughout disassembly/assembly work, be very careful not to break the FPC and not to overheat any part during soldering.*

Note *7: When soldering the focus motor and zoom motor, slightly lift up the FPC so that there is a space of 1 mm or so remaining between the FPC and terminals.*

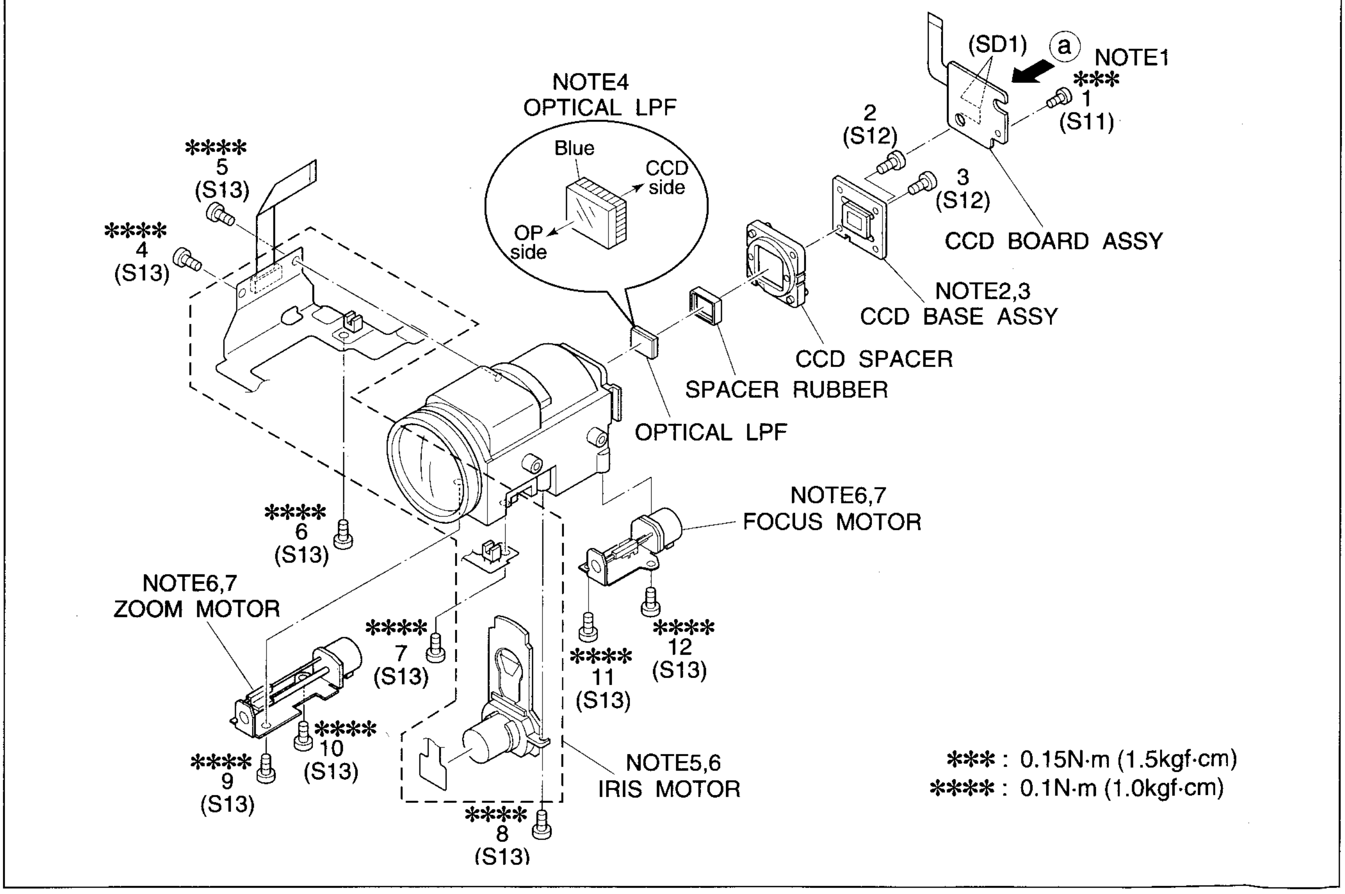


Fig. 1-4-1

1.5 DISASSEMBLY/ASSEMBLY OF MONITOR ASSEMBLY

Note *1: For a convenience of explanation, the monitor assembly is roughly divided into two blocks as mentioned below.*
- *Monitor block (monitor cover assembly/monitor case assembly, MONITOR board assembly, etc.)*
- *Hinge assembly block (hinge cover [upper/lower], FPC assembly, bracket)*
  Don't remove the screws of No. 5 to No. 10 except for dismantling the hinge assembly block (hinge cover [upper/lower], FPC assembly and bracket).

Note *2: Don't reuse any screw that was once removed for disassembling.*

Note *3: Be careful not to break down any switch (open/closed status sensor) and FPC.*

1. Remove four screws (1 to 4) first, and then remove the monitor cover assembly unhooking it by 7 points (L2 to L8) while releasing L1 from locking.
2. While unlocking the connector Ⓢ, pull out the FPC and then remove the hinge assembly.

Note *4: The following steps (3 to 8) explain the procedure to disassemble the monitor block.*

<Disassembly of monitor block>

3. Pull the wire out of the connector Ⓣ.
4. Unlock the connector Ⓤ and pull out the FPC. While unhooking two hooks (L9, L10), remove the MONITOR board assembly.

Note *5: When remounting the MONITOR board assembly, carefully arrange the FPC and wires.*

Note *6: In case of the 3-inch monitor, fold down the FPC on the connector Ⓤ.*

5. After unhooking seven hooks (L11 to L17) in the numerical order, remove the holder (PWB).

Note *7: When remounting the holder (PWB), arrange the backlight wires inside the holder.*
After remounting the holder, check to see if it is tightly fastened without wobbling while paying heed to the hooking (L12, L14) of the back light.

6. Remove the back light.
7. Remove the LCD module.
8. Remove the holder (LCD) and bracket (earth).

Note *8: The holder (LCD) is used only for the 3-inch monitor.*

<Disassembly of hinge assembly block>

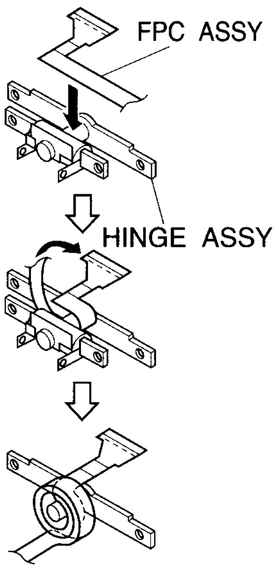
9. Remove one screw (5) and then remove the SWITCH (open/closed) board assembly.
10. Remove two screws (6, 7) and then remove the bracket.
11. Remove one screw (8) and then remove the SWITCH (rotation) board assembly.
12. Remove two screws (9, 10) and then remove the hinge cover (U) while unhooking it by four points (two hooks of L20 and two hooks of L21) on both sides.
13. While displacing the hinge cover (L), pull out the FPC assembly and finally remove the hinge cover.

Note *9: Since the FPC assembly is branched into two, first remove the SWITCH (open/closed) board assembly and then disconnect the other branch of the FPC assembly.*

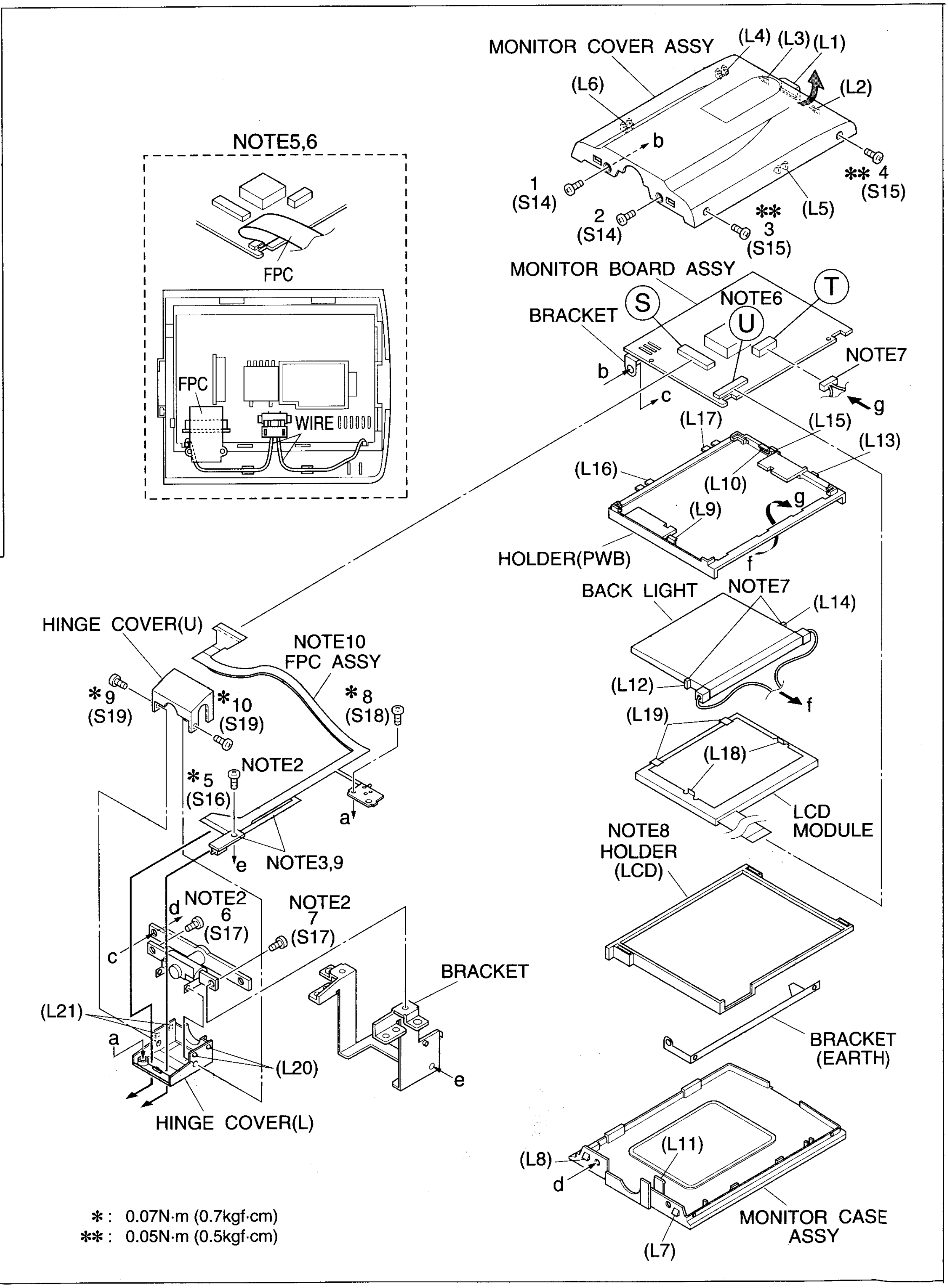
14. Remove the FPC assembly from the hinge assembly.

Note *10: Carefully handle the FPC not to break it.*

NOTE10,11



Note *11: The FPC assembly should be winded around the hinge assembly by two and half turns so that the wire to be connectged to the monitor board assembly is positioned inside.*


MONITOR COVER ASSY
(L4) (L3) (L1)
(L2)
(L6)
b
1
(S14)
2
(S14)
** 3
(S15)
** 4
(S15)
(L5)
NOTE5,6
FPC
FPC
WIRE
MONITOR BOARD ASSY
BRACKET
S
NOTE6
U
T
NOTE7
b
c
g
(L17)
(L15)
(L13)
(L16)
(L10)
g
(L9)
HOLDER(PWB)
f
BACK LIGHT
NOTE7
(L14)
(L12)
f
(L19)
(L18)
LCD MODULE
NOTE8
HOLDER
(LCD)
BRACKET
(EARTH)
(L11)
(L8)
d
MONITOR CASE ASSY
(L7)
HINGE COVER(U)
NOTE10
FPC ASSY
*9
(S19)
*10
(S19)
*8
(S18)
*5
(S16)
NOTE2
a
e
NOTE3,9
d
NOTE2
6
(S17)
NOTE2
7
(S17)
c
BRACKET
(L21)
a
(L20)
e
HINGE COVER(L)

*: 0.07N·m (0.7kgf·cm)

**: 0.05N·m (0.5kgf·cm)

Fig. 1-5-1

1.6 DISASSEMBLY/ASSEMBLY OF ELECTRONIC VIEWFINDER (VF)

1.6.1 Disassembly/Assembly of B/W VF

Note *1: When remove the B/W VF, leave the hinge assembly VF), bracket (VF) and VF case (L) as they are fitted to the VF. For remove the hinge assembly (VF) and bracket (VF), refer to the exploded view (section 5).*

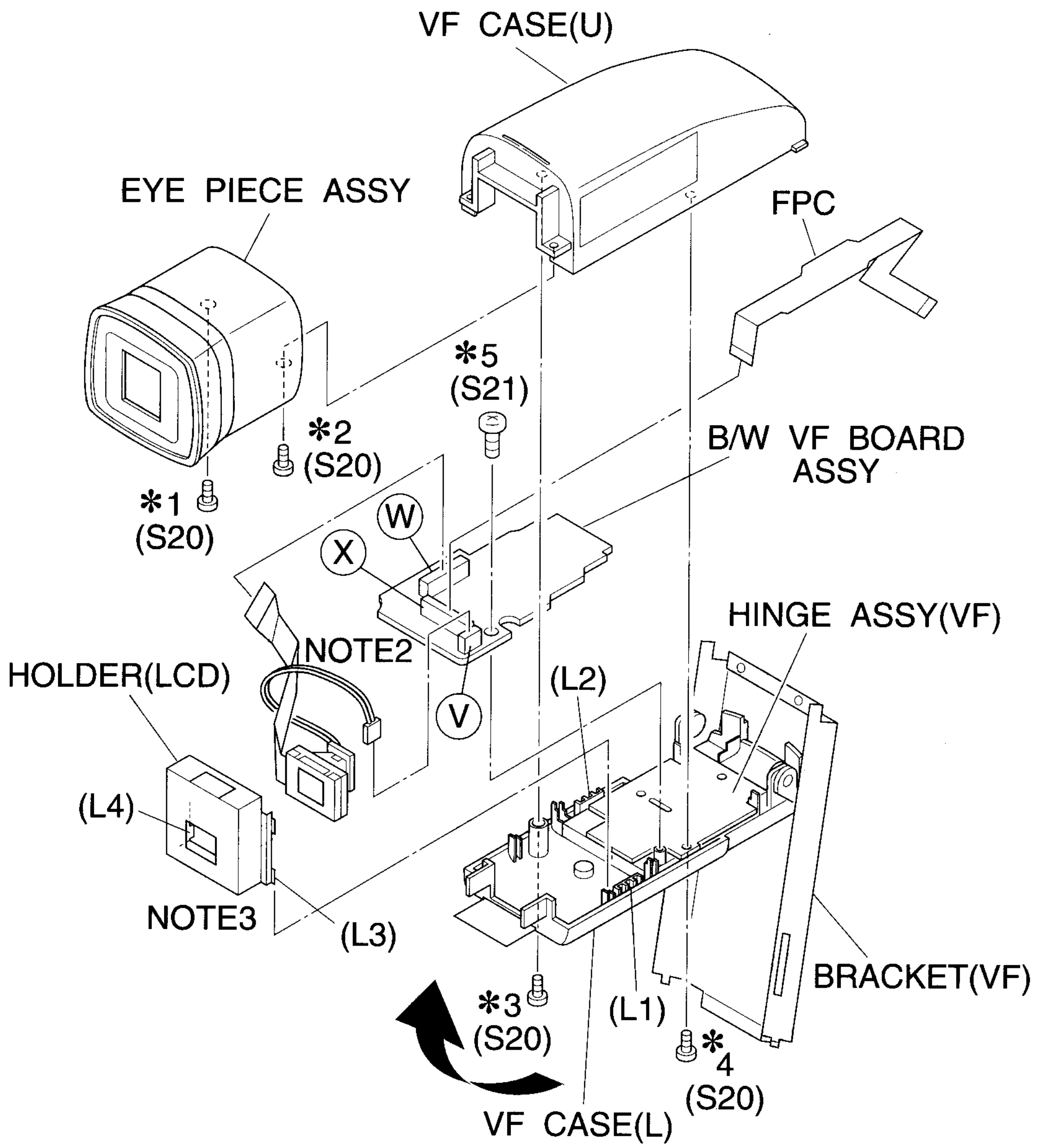
1. Raising the VF assembly, remove two screws (1, 2) and then remove the eye piece assembly.
2. Remove two screws (3, 4) and then remove the VF case assembly (U) while unhooking it from L1 and L2.

Note *2: When assembling, move the FPC inwards with a wire paying careful attention to it not to break it.*

3. Pull the wire out of the connector V.
4. Unlocking the connector W, pull out the FPC.
5. While holding the holder (LCD) by hand, remove the LCD module together with the backlight.

Note *3: When assembling, set the bosses (L3, L4) of the holder (LCD) in the groove.*

6. Remove one screw (5) and then remove the VF (B/W) board assembly.


VF CASE(U)
EYE PIECE ASSY
FPC
*5
(S21)
*2
(S20)
B/W VF BOARD ASSY
*1
(S20)
W
X
HINGE ASSY(VF)
NOTE2
HOLDER(LCD)
(L2)
V
(L4)
NOTE3
(L3)
*3
(S20)
(L1)
BRACKET(VF)
*4
(S20)
VF CASE(L)

* : 0.07N·m (0.7kgf·cm)

Fig. 1-6-1

1.6.2 Disassembly/assembly of COLOR VF

Note *1: When remove the color VF, leave the hinge assembly (VF), bracket (VF) and VF case (L) as they are fitted to the VF. For remove the hinge assembly (VF) and bracket (VF), refer to the exploded view (section 5).*

1. Raising the VF assembly, remove two screws (1, 2) and then remove the eyepiece assembly.
2. Remove two screws (3, 4) and then remove the VF case assembly (U) while unhooking it from L1 and L2.

Note *2: When assembling, pay careful attention to the FPC not to break it.*

3. While holding the holder (LCD) by hand, remove the VF BL board assembly.

Note *3: When assembling, set the bosses (L3, L4) of the holder (LCD) in the groove.*

4. While unhooking the holder (LCD) from the hooks (L5, L6) on both sides, remove the holder.

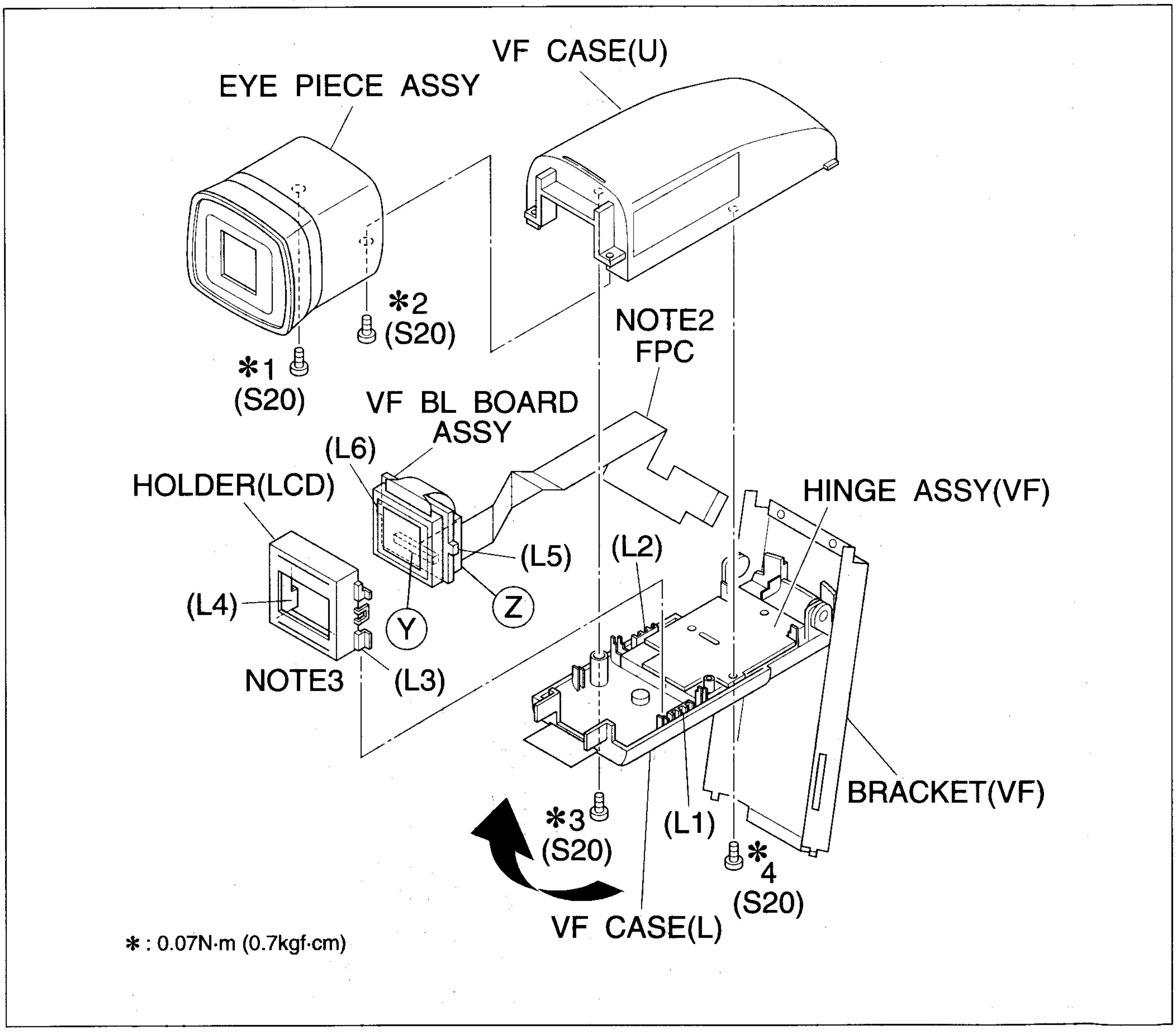

VF CASE(U)
EYE PIECE ASSY
*2
(S20)
*1
(S20)
NOTE2
FPC
VF BL BOARD ASSY
(L6)
HOLDER(LCD)
HINGE ASSY(VF)
(L5)
(L2)
(L4)
Z
Y
NOTE3
(L3)
BRACKET(VF)
*3
(S20)
(L1)
*4
(S20)
VF CASE(L)
* : 0.07N·m (0.7kgf·cm)

Fig. 1-6-2

1.7 CONNECTION OF CONNECTORS

LIST<DISASSEMBLY>

▨ : Connector of removed component during disassembly

No.	Fig No.	SYMBOL	Connected point					Pin No.	Class	Note / Patch cord
1	1-3-5	Ⓐ	MAIN PWB	CN109	←→	ZOOM UNIT	–	15	FPC	YTU94077-15 / YTU94074-15
2	1-3-6	Ⓑ	MAIN PWB	CN104	←→	VF(B/W or COLOR)	CN7001/CN7301	10 or 20	FPC	YTU94077-10,20 / YTU94074-10,20
3	1-3-6	Ⓒ	MAIN PWB	CN106	←→	CCD PWB	–	18	FPC	YTU94077-18 / YTU94074-18
4	1-3-6	Ⓓ	MAIN PWB	CN107	←→	OP BLOCK	–	22	FPC	YTU94077-22 / YTU94074-22
5	1-3-6	Ⓔ	MAIN PWB	CN108	←→	DC LIGHT	–	2	WIRE	NC
6	1-3-6	Ⓕ	MAIN PWB	CN101	←→	SECOND PWB	CN301	100	B-B	YTU94126A-100
7	1-3-6	Ⓖ	MAIN PWB	CN102	←→	HINGE ASSY	–	40	FPC	DIRECT
8	1-3-6	Ⓗ	MAIN PWB	CN110	←→	OPE COVER UNIT	–	10	FPC	YTU94077-10 / YTU94074-10
9	1-3-7	Ⓙ	SECOND PWB	CN302	←→	MIC	–	3	WIRE	DIRECT
10	1-3-12	Ⓚ	SECOND PWB	CN304	←→	SPEAKER	–	2	WIRE	NC
11	1-3-13	Ⓛ	JUNCTION PWB	CN503	←→	DRUM MOTOR	–	11	FPC	DIRECT
12	1-3-13	Ⓜ	JUNCTION PWB	CN501	←→	SECOND PWB	CN401	35	FPC	DIRECT
13	1-3-13	Ⓝ	JUNCTION PWB	CN504	←→	LOADING MOTOR	–	6	FPC	DIRECT
14	1-3-13	Ⓞ	JUNCTION PWB	CN502	←→	SENSOR	–	15	FPC	DIRECT
15	1-3-14	Ⓟ	SECOND PWB	CN403	←→	ROTARY ENCODER	–	6	FPC	YTU94077-6 / YTU94074-6
16	1-3-14	Ⓠ	SECOND PWB	CN404	←→	HEAD	–	8	FPC	DIRECT
17	1-3-14	Ⓡ	SECOND PWB	CN402	←→	CAPSTAN MOTOR	–	18	FPC	DIRECT
18	1-5-1	Ⓢ	MONITOR PWB	CN7501	←→	HINGE ASSY	–	38	FPC	DIRECT
19	1-5-1	Ⓣ	MONITOR PWB	CN7503	←→	BACK LIGHT	–	2	WIRE	DIRECT
20	1-5-1	Ⓤ	MONITOR PWB	CN7502	←→	LCD MODULE	–	24	FPC	DIRECT
21	1-6-1	Ⓥ	VF(B/W) PWB	CN7003	←→	BACK LIGHT	–	2	WIRE	DIRECT
22	1-6-1	Ⓦ	VF(B/W) PWB	CN7002	←→	LCD MODULE	–	20	FPC	DIRECT
23	1-6-1	Ⓧ	VF(B/W) PWB	CN7001	←→	MAIN PWB	CN104	10	FPC	YTU94077-10 / YTU94074-10
24	1-6-2	Ⓨ	VF(COLOR) PWB	CN7302	←→	LCD MODULE	–	16	FPC	DIRECT
25	1-6-2	Ⓩ	VF(COLOR) PWB	CN7301		MAIN PWB	CN104	20	FPC	YTU94077-20 / YTU94074-20
26	–	–	MAIN PWB	CN105	←→	JIG CONN.	–	30	B-B	YTU93082C (JIG CONNECTOR)

Fig. 1-7-1

1.8 HOW TO TAKE OUT CASSETTE TAPE MANUALLY

On the occasion that the cassette tape cannot be ejected because of an electrical trouble, remove the cassette tape manually according to the following procedure.

Since the following procedure is just a simple measure to remove the cassette tape, it is recommended to dismantle cabinet parts and externally installed components as many as possible so that the cassette tape can be removed smoothly without force from viewpoints of workability and reliability of the removing work.

1. Disconnect all the power supplies (battery and DC cord) from the camera.
2. Open the monitor assembly and remove the upper cases (2) and (1). (Refer to Fig. 1-3-2 and 1-3-3.)
3. Open the cassette cover assembly.
4. Connect 3 V DC power to the electrodes on the top of the loading motor to side the slide deck assembly towards the front side and stop the power supply when both the pole bases are located inside the tape as their unloading operation. At this point pay careful attention to the tape not to get it damaged or soiled with grease, etc., because the tape remains outside the cassette as it is not wound completely. If the DC power is continuously supplied after both the pole bases are returned inside the tape, the mechanism enters the eject mode and the cassette housing is accordingly lifted up. If this operation takes place, the part of the tape remaining outside is caught in the cassette lid and the tape may be damaged partially. Be careful not to supply the DC power excessively.
5. Turn the center gear with a sharp-pointed stick (chip IC replacing jig, etc.) in the direction of the arrow to wind up the remaining part of the tape. At that time, carefully turn the center gear not to damage the tape.

   If the remaining part of the tape cannot be wound inside the cassette though the center gear is turned, it is thinkable that the idler arm assembly is located at a point where it does not engage with the reel disk assembly. If so, shift the mechanism mode and fine adjust the position of the idler arm assembly, then try to wind up the remaining tape once again.

   For adjusting the position of the idler arm assembly, it is recommended to shift it slightly in the loading direction.
6. After making sure that the tape is completely wound inside the cassette, proceed with unloading operation of the mechanism until it reaches the eject position and remove the cassette tape at this mechanism position.
7. After removing the cassette tape out of the cassette housing, check to see if the part of the tape that was wound manually is soiled with grease, etc. or not. At the same time, check the mechanism, particularly the tape transport system, for soil with grease, etc.

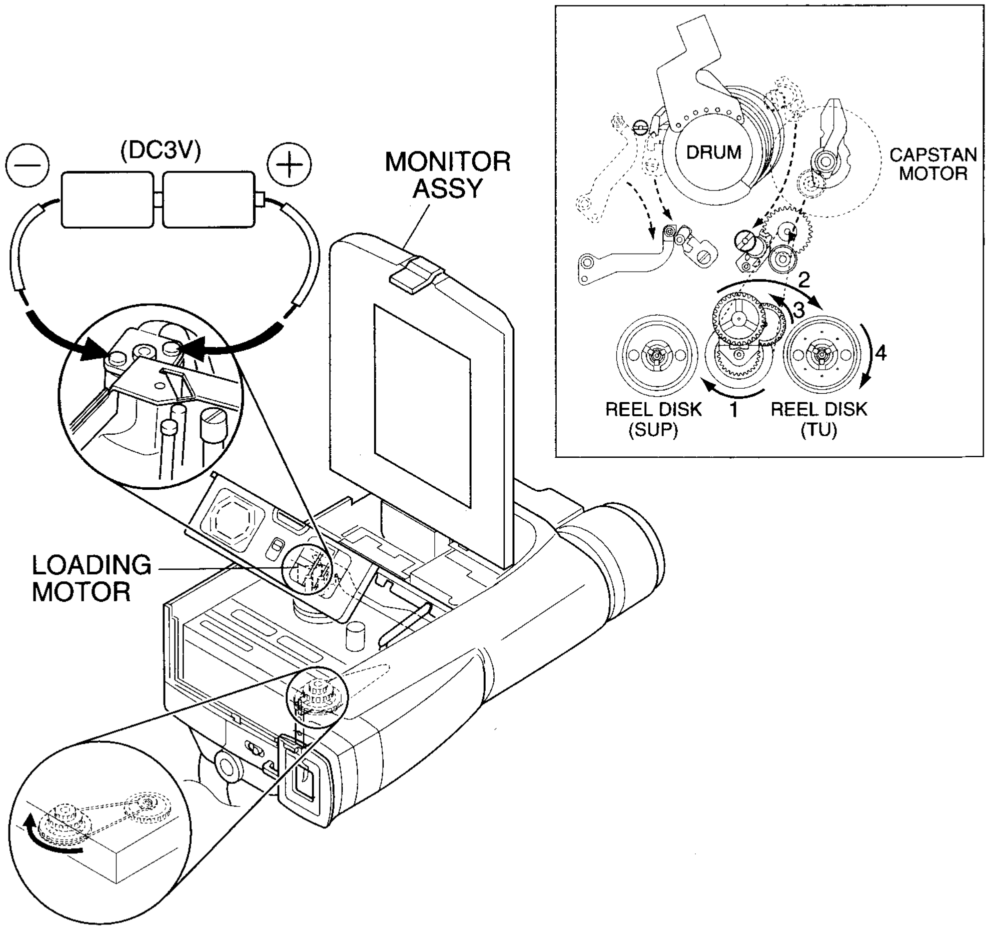


Fig. 1-8-1

1.9 EXTENTION CABLE CONNECTION

No.	Connected point			Pin No.	Note/Patch cord
①	MAIN PWB CN101	↔	SECOND PWB CN301	100	YTU94126A-100
②	MAIN PWB CN106	↔	CCD PWB	18	YTU94077-18/YTU94074-18
③	MAIN PWB CN107	↔	OP BLOCK	22	YTU94077-22/YTU94074-22
④	MAIN PWB CN104	↔	VF (B/W) CN7001	10	YTU94077-10/YTU94074-10
	MAIN PWB CN104	↔	VF (COLOR) CN7301	20	YTU94077-20/YTU94074-20
⑤	MAIN PWB CN110	↔	OPE. COVER UNIT	10	YTU94077-10/YTU94074-10
⑥	MAIN PWB CN109	↔	ZOOM UNIT	15	YTU94077-15/YTU94074-15

Table 1-9-1

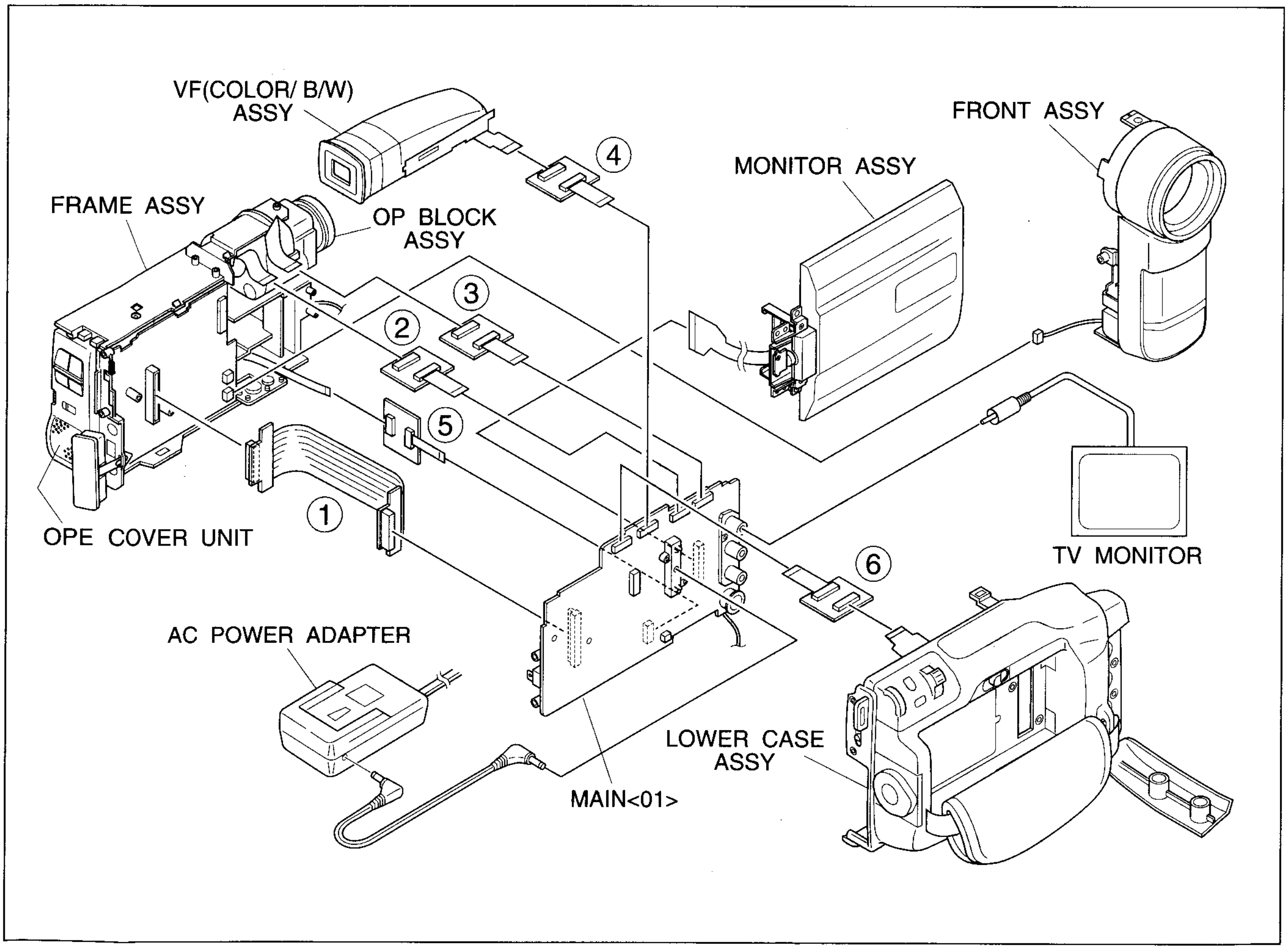

VF(COLOR/ B/W) ASSY
FRONT ASSY
④
MONITOR ASSY
FRAME ASSY
OP BLOCK ASSY
③
②
⑤
①
OPE COVER UNIT
⑥
TV MONITOR
AC POWER ADAPTER
LOWER CASE ASSY
MAIN<01>

Fig. 1-9-1

1.10 SERVICE NOTE

Screw Management Table

Symbol No. →	①		②	③			④										⑤			
Removing order of Screw →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Place to stick Screw →																				
Reference drawing →	1-3-2		1-3-3	1-3-4			1-3-5										1-3-6			
Screw tightening torque →	I	I	I	I	Ⅱ	Ⅱ	Ⅲ	Ⅱ	Ⅱ	I	I	I	I	I	I	I	I	Ⅱ	I	I

Symbol No. →	⑥/⑦/⑧		⑦	⑧	⑨		⑩			⑪			⑫				⑬		⑭
Removing order of Screw →	21	22	23	—	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Place to stick Screw →				—								*							
Reference drawing →	1-3-7		1-3-8		1-3-9		1-3-10			1-3-11			1-3-12				1-3-13		1-3-14
Screw tightening torque →	I	I	I	—	I	I	I	I	I	I	I	Ⅳ	I	I	I	I	Ⅱ	Ⅲ	Ⅱ

Symbol No. →	⑮	
Removing order of Screw →	39	40
Place to stick Screw →		
Reference drawing →	1-3-15	
Screw tightening torque →	Ⅱ	Ⅱ

⑨ OP BLOCK ASSY												
1	2	3	4	5	6	7	8	9	10	11	12	13
1-4-1												
Ⅳ	I	I	V	V	V	V	V	V	V	V	V	V

Symbol No. →	⑩ MONITOR ASSY									
Removing order of Screw →	1	2	3	4	5	6	7	8	9	10
Place to stick Screw →					*	*	*			
Reference drawing →	1-5-1									
Screw tightening torque →	I	I	V	V	Ⅱ	I	I	Ⅱ	Ⅱ	Ⅱ

⑪ E VF ASSY(B/W)			
1	2	3	4
1-6-1			
Ⅱ	Ⅱ	Ⅱ	Ⅱ

⑪ E VF ASSY(COLOR)				
1	2	3	4	5
1-6-2				
Ⅱ	Ⅱ	Ⅱ	Ⅱ	Ⅱ

NOTE

1) * : Don't reuse the screw, because screw lock bond was applied to them.

2) Pay careful attention to tightening torque for each screw.

I : 0.2N·m(2.0kgf·cm)
Ⅱ : 0.07N·m(0.7kgf·cm)
Ⅲ : 0.05N·m(0.5kgf·cm)
Ⅳ : 0.15N·m(1.5kgf·cm)
V : 0.1N·m(1.0kgf·cm)

Fig. 1-10-1

1.11 DEMONSTRATION MODE

This model has the DEMONSTRATION mode.

1) How to set the DEMONSTRATION mode.
The camera can be entered into the DEMONSTRATION mode by setting on the DISPLAY screen appearing on the LCD monitor (or in the viewfinder).

When entering the camera into the DEMONSTRATION mode, pay heed to the following matters.

No cassette is set in the camcorder or a cassette is set in the camcorder but it is protected from recording.

2) How to cancel the DEMONSTRATION mode.
To cancel the DEMONSTRATION mode, turn the POWER switch off ("POWER OFF").

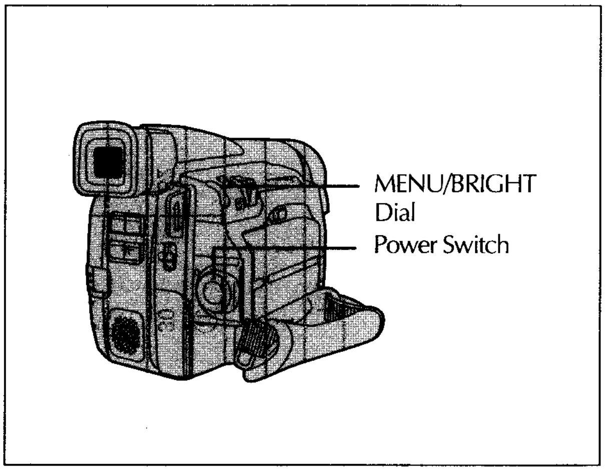
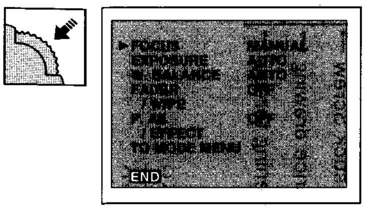


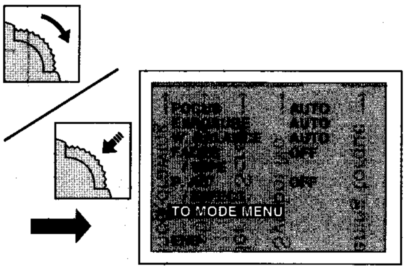
Fig. 1-11-1

Note) *The indications of the DISPLAY page very depending on the setting.*

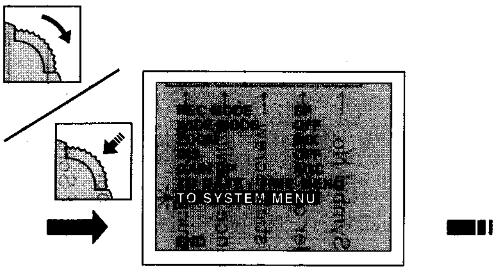
1. Set the POWER switch to turn on the "Ⓜ". Press the MENU/BRIGHT Dial once. The first page of the DISPLAY appears on the LCD monitor (or in the viewfinder).
2. Turn the MENU/BRIGHT Dial in the direction of the arrow to set the curssor at "TO MODE MENU". Then, press the MENU/BRIGHT Dial once. The second page of the DISPLAY appears on the LCD monitor (or in the viewfinder).
3. Turn the MENU/BRIGHT Dial in the direction of the arrow to set the cursor at "TO SYSTEM MENU". Then , press the MENU/BRIGHT Dial once. The third page of the DISPLAY appears on the LCD monitor (or in the viewfinder).



Display 1



Display 2



Display 3

<Flow chart>

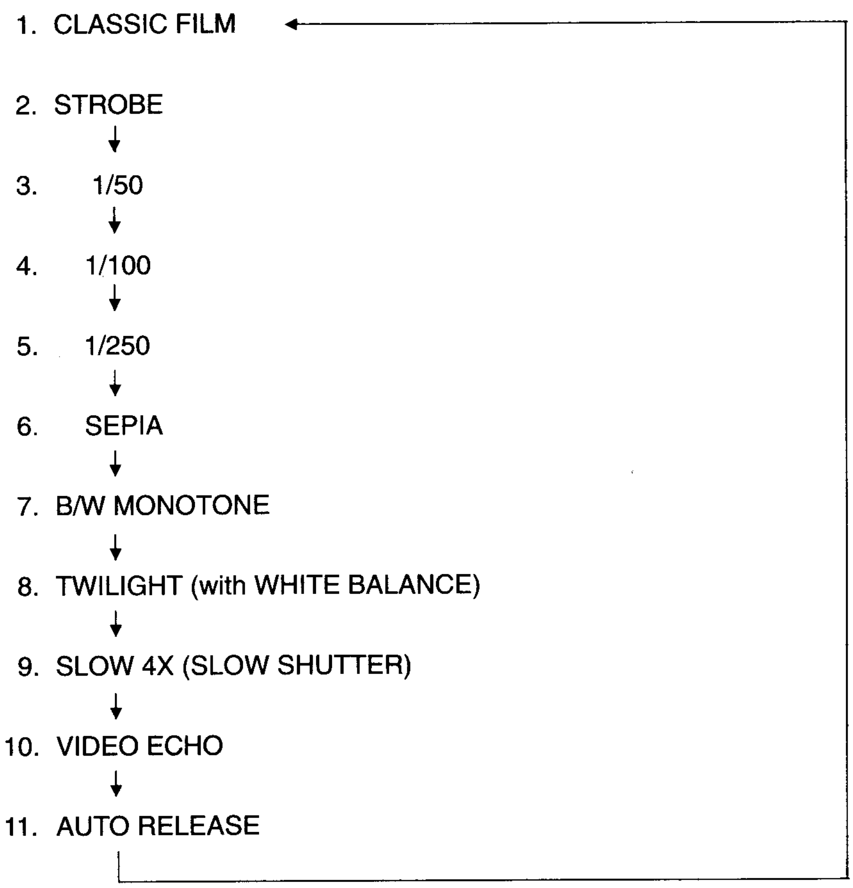
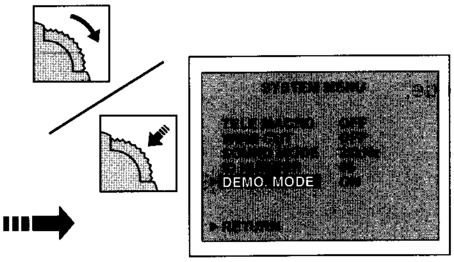

1. CLASSIC FILM
2. STROBE
3. 1/50
4. 1/100
5. 1/250
6. SEPIA
7. B/W MONOTONE
8. TWILIGHT (with WHITE BALANCE)
9. SLOW 4X (SLOW SHUTTER)
10. VIDEO ECHO
11. AUTO RELEASE

Fig. 1-11-2

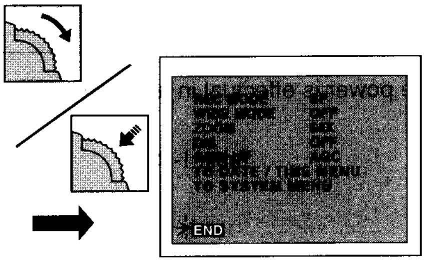
4. Turn the MENU/BRIGHT Dial in the direction of the arrow to set the cursor at "DEMO MODE". Then, press the MENU/BRIGHT Dial once.
   The fourth page of the DEMO MODE appears on the LCD monitor (or in the viewfinder).

5. Turn the MENU/BRIGHT Dial in the direction of the arrow to set the cursor at "ON". Then, press the MENU/BRIGHT Dial once.
   The fifth page of the DISPLAY appears on the LCD monitor (or in the viewfinder).
   ("DEMO MODE" is switched "ON" from "OFF" status.)

6. Press the SELECT DIAL twice.
   The camcorder automatically enters the DEMONSTRATION mode and it repeats demonstration operation.
   While the camcorder is performing demonstration, all operations except turning on/off the POWER switch are ineffectual.



Display 4



Display 5

Refer to Fig. 1-11-2.

While the DEMONSTRATION mode is activated, a word of "DEMONSTRATION" blinks on the screen.

1.12 PRECAUTIONS ON HANDLING THE LITHIUM BATTERY (J506/MAIN BOARD ASSY)

This unit is equipped with a button-type lithium secondary battery. Improper handling of this battery may cause heat to be generated, damaged, fires or leakage. Always follow the precautions below.

① Be sure not to shortcircuit, disassemble, deform and heat it.
② Carefully set the lithium battery so that its positive and negative poles are correctly connected respectively.
③ Don't solder anything directly to the lithium battery.
④ When replacing the lithium battery, be sure to do it with correct one referring to the part number appearing in the parts list of the manual.
⑤ When keeping the lithium battery, avoid direct sunlight, high temperature and high humidity.
⑥ When replacing the lithium battery, avoid using metallic tools such as tweezers, etc. for picking it up because such the tool may cause shortcircuit.
⑦ When disposing the lithium battery, cover the electrodes with adhesive tape or the like for insulation.

1.13 EMERGENCY DISPLAY

When there is something abnormal with this Digital VideoMovie during operation, an error number (Example: E01) representing the trouble appears on the LCD monitor.

LCD display	Emergency mode	Symptom	Survellance mode	Mode to shsift
E01	LOADING	The mechanism does not shift to the next mode (in the LOADING direction) though it has passed more than 4 seconds after the mechanism was required to do it.	LOADING	Mode continues
E02	UNLOADING	The mechanism does not shift to the next mode (in the UNLOADING direction) though it has passed more than 4 seconds after the mechanism was required to do it.	UNLOADING	Mode continues
E03	REEL FG	No REEL FG (TU or SUP) signal is input for more than 4 seconds in the mode that the reel must rotate.	When reel is rotating.	STOP
E04	DRUM FG	No DRUM FG signal is input for more than 3 seconds in the mode that the drum motor must rotate.	When drum is rotating.	STOP
–	–	–	–	–
E06	CAPSTAN FG	No CAPSTAN FG signal is input for more than 1.5 seconds in the mode that the capstan motor must rotate (the pinch roller is pressed to the capstan).	When capstan is rotating (pinch roller is pressed to it).	STOP

Note : Only the operation to turn on/off the power is effectual in any emergency mode.

Table 1-13-1

SECTION 2
MECHANISM ADJUSTMENT

2.1 PRELIMINARY REMARKS ON ADJUSTMENT AND REPAIR

2.1.1 Precautions

1. When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.04 N·m (0.4 kgf·cm).
2. Be sure to disconnect the set from the power supply before fastening and soldering parts.
3. When disconnecting/connecting wires, be careful not to get them and their connectors damaged. (Refer to the Section 1.)
4. When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

2.1.2 Necessary jigs

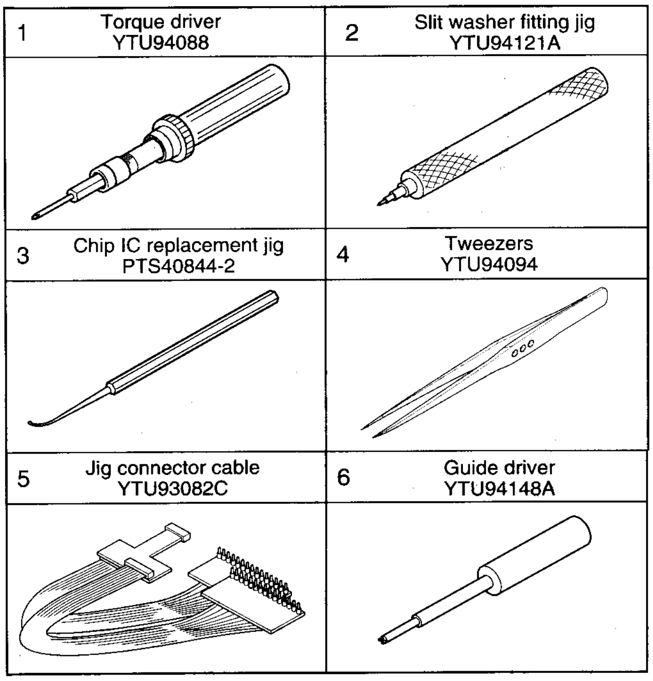

1 Torque driver YTU94088
2 Slit washer fitting jig YTU94121A
3 Chip IC replacement jig PTS40844-2
4 Tweezers YTU94094
5 Jig connector cable YTU93082C
6 Guide driver YTU94148A

Fig. 2-1-1

2.1.3 Notes on disassembling/reassembling procedure

The disassembling procedure table (Table 2-2-2 on page 2-5, a part of the table is shown below for reference) shows the procedure to disassemble/reassemble mechanism parts. Carefully read the following explanation before starting actual disassembling/reassembling work. The item numbers (circled numbers) in the following explanation correspond to those appearing under respective columns of the table.

(1) Circled numbers appearing in this column indicate the order to remove parts. When reassembling, follow these numbers in the reverse order. Circled numbers in this column correspond to those appearing in drawings of this section.

(2) This column shows part names corresponding to circled numbers in the left column.

(3) The symbol (T or B) appearing in this column shows the side which the objective part is mounted on.
T = the upper side, B = the lower side

(4) Symbols appearing in this column indicate drawing numbers.

(5) This column indicates parts and points such as screws, washers, springs, and others to be removed/fitted for disassembling/reassembling the mechanism. Besides such the parts, this column occasionally indicates working points.
P = Spring W = Washer S = Screw
Lock (L), soldering (SD), shield, connector (CN), etc.

Example
- Remove (W1) = Washer W1.
- Remove the solder at (SD1) = Point SD1.
- Disconnect Ⓐ = Connector Ⓐ.

(6) Numbers in this column represent the numbers of notes in the text. For example, "1" means "Note 1".
(For parts that need phase adjustment after reassembling, refer to "2.2.7 Check and adjustment of mechanism phase".)

(7) This column indicates required after-disassembling/-reassembling work such as phase adjustment or mechanism adjustment.

2.1.4 Screws and washers used in mechanism

Table 2-1-1 shows screws and washers used in the mechanism by the part numbers with their respective symbols, shapes and colors.

When disassembling/reassembling the mechanism, be careful not to make any mistake in removing/refitting screws and washers.

Symbol	Shape	Parts No.
(S1)		YQ43893-4
(S2)		YQ43893
(S3)		YQ43893-2
(S4)		QYSLSF2055D
(S5)		QYSLSP2030D

Symbol	Shape	Parts No.
(W1)		YQ44246
(W2)		YQ44246-2
(W3)		LY41573-001A
(W4)		LY41674-001A

Table 2-1-1

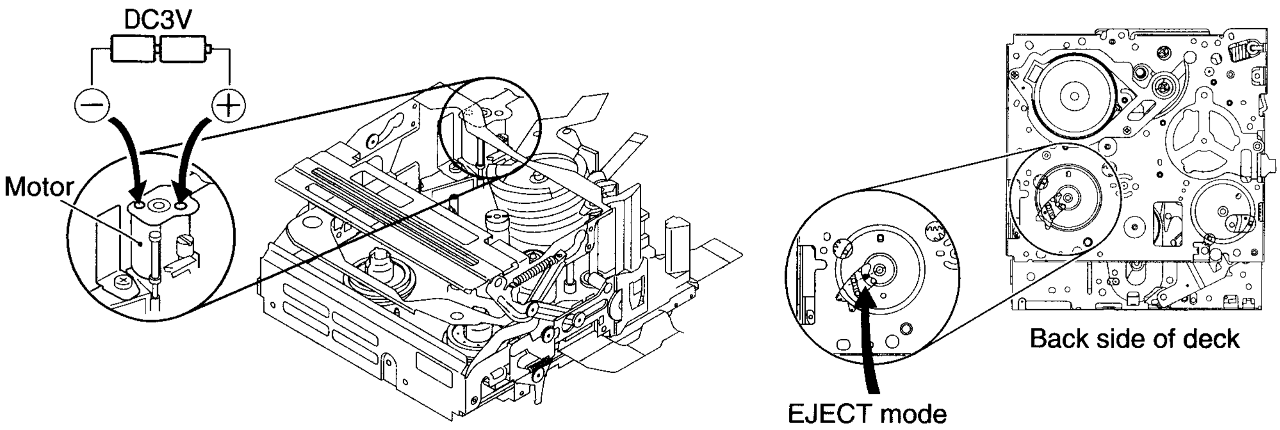
Step	Part Name		Fig.	Point	Note	Remarks
Ⓐ	Cassette housing assembly	T	M1	3(S1),(L1)-(L4)	1,28,29,30	Adjustment
①	Reel disk (SUP) assembly	T	M2	(W1)	2,3	
↑ (1)	↑ (2)	↑ (3)	↑ (4)	↑ (5)	↑ (6)	↑ (7)

2.2 DISASSEMBLING/REASSEMBLING MECHANISM ASSEMBLY

2.2.1 General statement

The mechanism should generally be disassembled/reassembled in the EJECT mode (ASSEMBLY mode). (Refer to Fig. 2-2-1.)

However, when the mechanism is removed from the main body, it is set in the STOP mode. Therefore, it is required to shift the mechanism mode from the STOP mode to the EJECT mode after the mechanism is removed from the main body. In such the case, supply 3 V DC to the electrode on the top of the loading motor to enter the mechanism mode into the EJECT mode.


<Mechanism assembly/Cassette housing assembly>

<Back side of the mechanism assembly>

Fig. 2-2-1

2.2.2 Explanation of mechanism mode

The mechanism mode of this model is classified into six modes as shown in Table 2-2-1. Each mechanism mode can be distinguished from others by the relative position of "●" mark on the sub cam gear to the inner or outer protrusion on the main deck.

Refer to Fig. 2-2-2 to 2-2-7 below.

The EJECT mode, C IN mode and SHORT FF mode should be recognized by the relative position of the "●" mark to the inner protrusion, while the STOP mode, REV mode and PLAY mode should be recognized by that to the outer protrusion.

<EJECT mode>

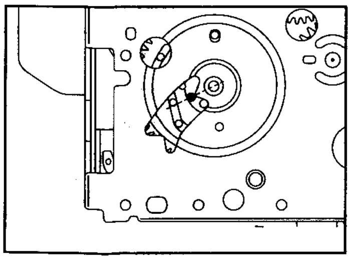


Fig. 2-2-2

<C IN mode>

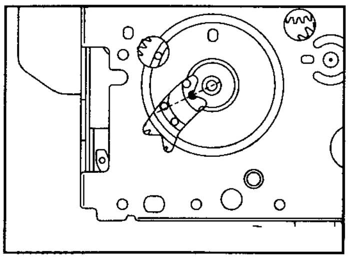


Fig. 2-2-3

<SHORT FF mode>

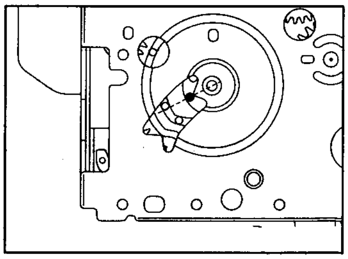


Fig. 2-2-4

<STOP mode>

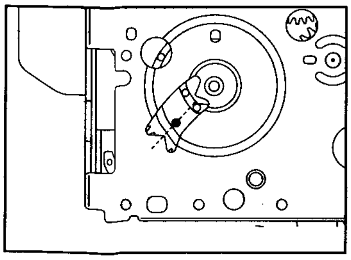


Fig. 2-2-5

<REV mode>

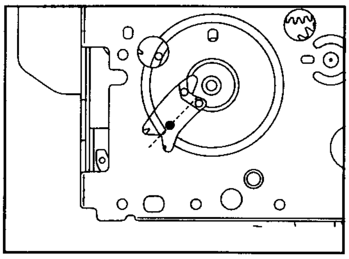


Fig. 2-2-6

<PLAY mode>

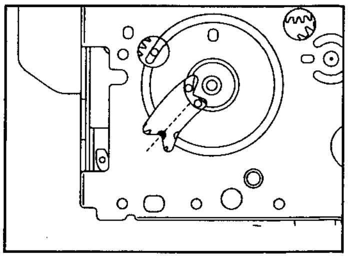


Fig. 2-2-7

2.2.3 Mechanism timing chart

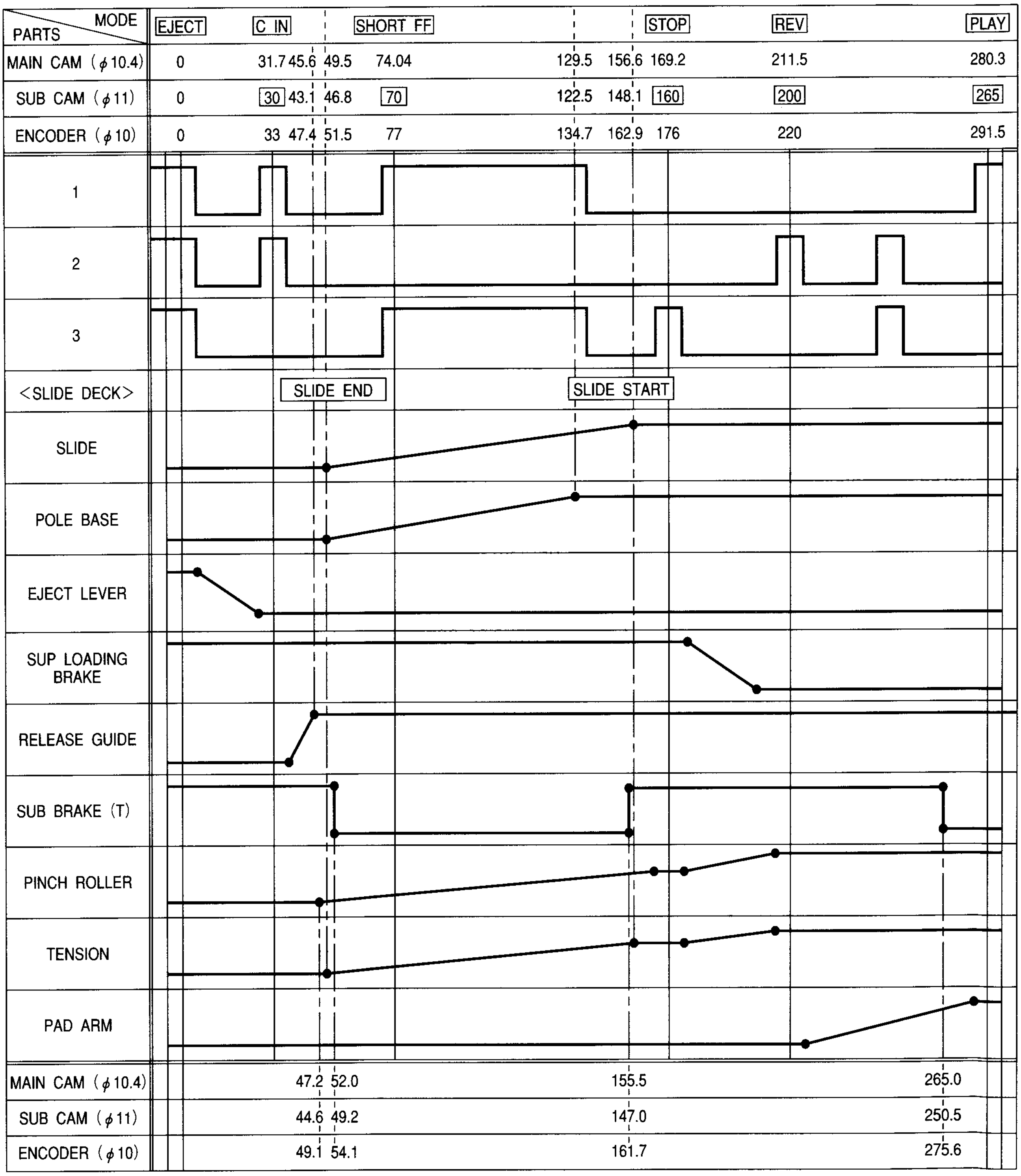


Table 2-2-1

2.2.4 Disassembling/reassembling mechanism assembly

1. Configuration

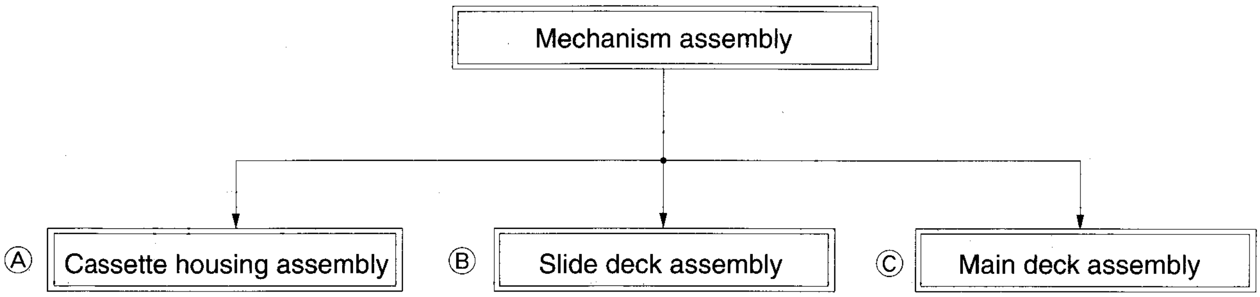

Mechanism assembly
Ⓐ Cassette housing assembly
Ⓑ Slide deck assembly
Ⓒ Main deck assembly

Fig. 2-2-8

2. Procedures for disassembly

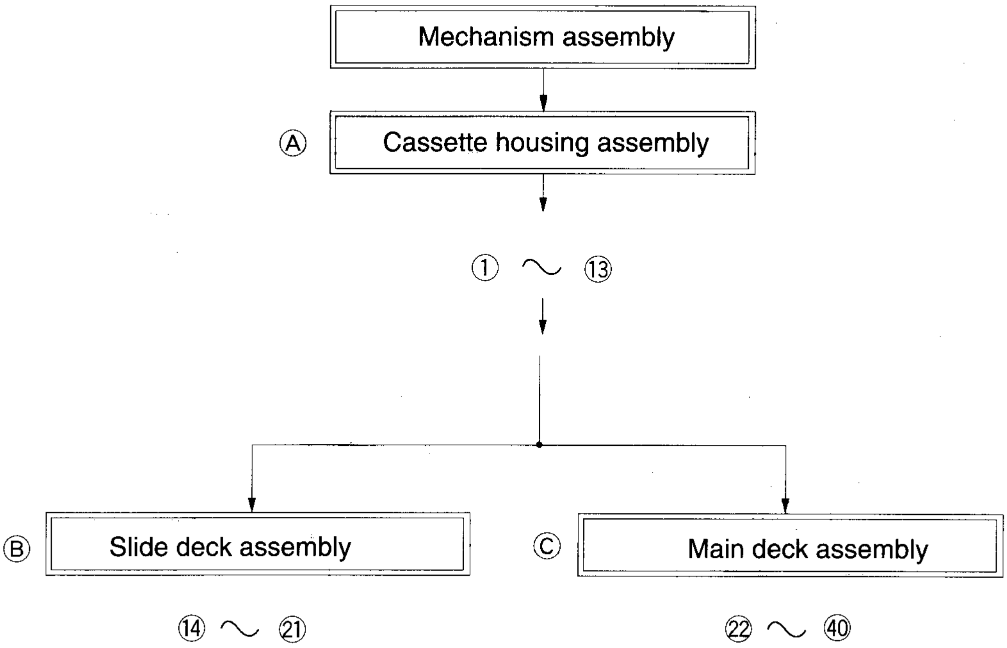
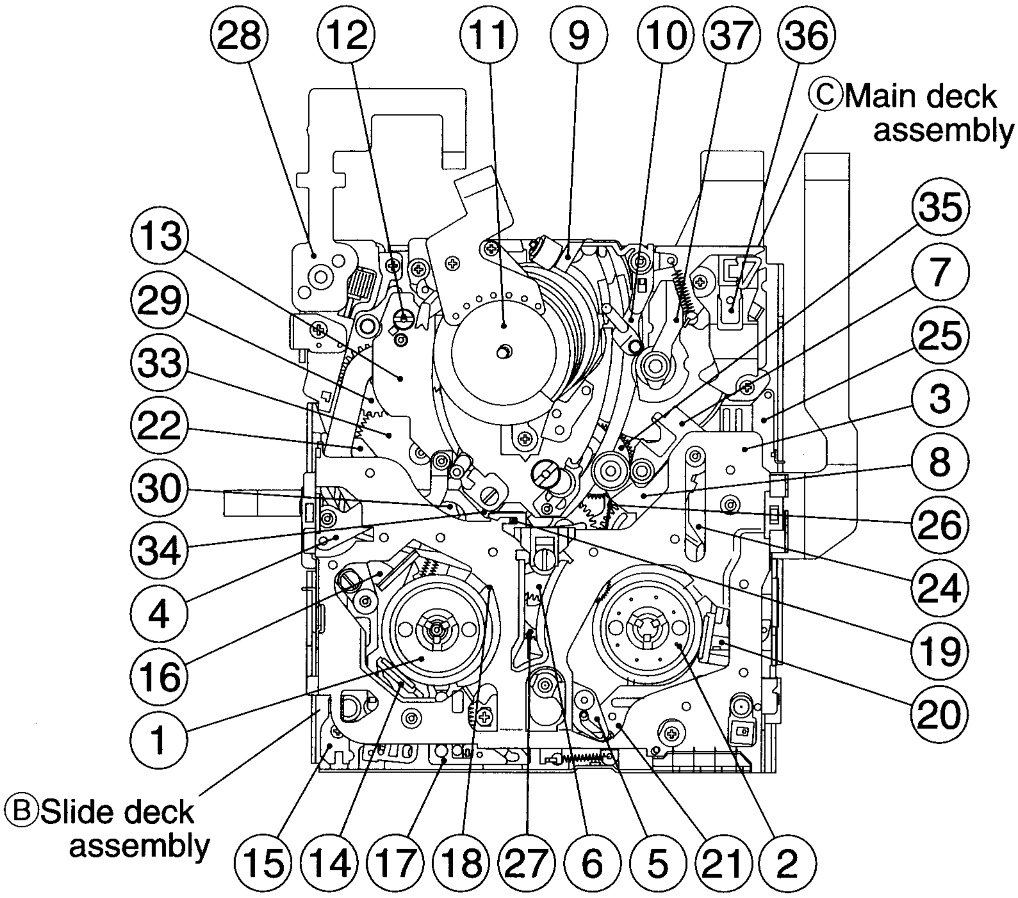

Mechanism assembly
Ⓐ Cassette housing assembly
① ～ ⑬
Ⓑ Slide deck assembly
Ⓒ Main deck assembly
⑭ ～ ㉑
㉒ ～ ㊵

Fig. 2-2-9

3. Disassembling procedure table

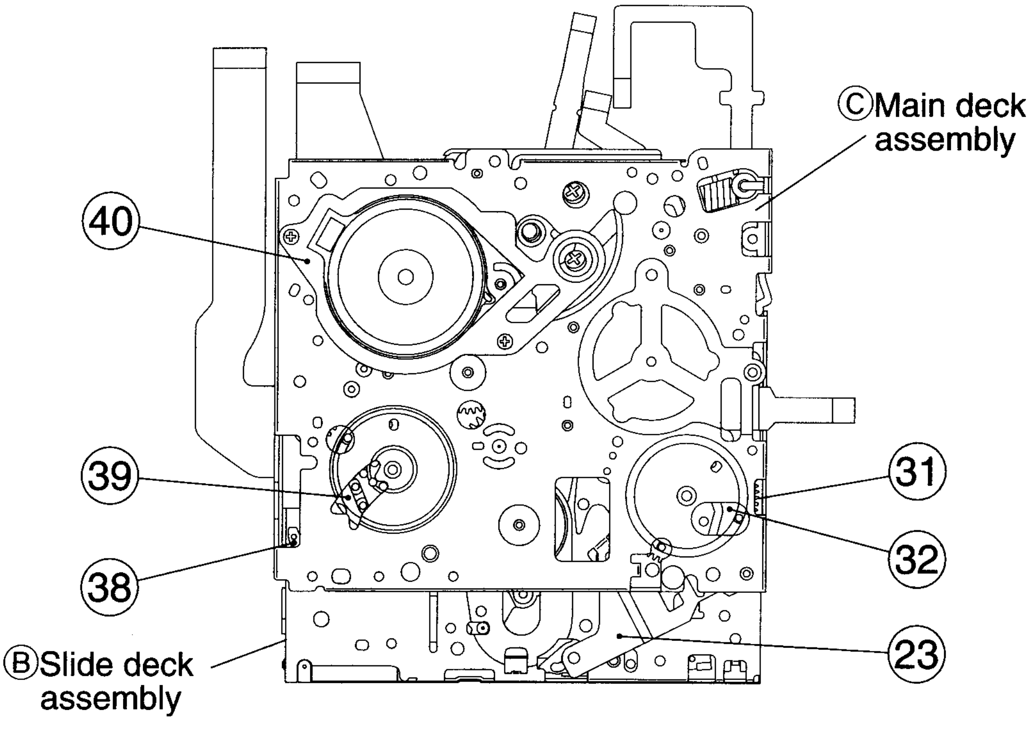
Step	Part Name		Fig.	Point	Note	Remarks
Ⓐ	Cassette housing assembly	T	M1	3(S1),(L1)-(L4)	1,28,29,30	Adjustment
①	Reel disk (SUP) assembly	T	M2	(W1)	2,3	
②	Reel disk (TU) assembly	T	M2	(W1)	2,3	
③	Reel cover assembly	T	M2	(S2),2(S1),(W1)	-	
④	Tension arm assembly	T	M3	(W1)	27	
⑤	Release guide assembly	T	M3	-	4	
⑥	Idler arm assembly	T	M3	(W2)	-	
⑦	Guide arm assembly	T	M3	-	4	
⑧	Pinch roller arm assembly	T	M3	(W1)	-	
⑨	Cleaner arm assembly	T	M4	(L5)	5	
⑩	Slant pole arm assembly	T	M4	(W1),(L6),(P1),(P2)	26	
⑪	Drum assembly	T	M4	3(S2)	6	
⑫	Guide roller (S) assembly	T	M5	(P3)	7,8	
⑬	Rail assembly	T	M5	3(W1), (W3)	9,25	
Ⓑ	Slide deck assembly / Ⓒ Main deck assembly	T	M6	(W1),(L7)-(L10)	10,24	(Adjustment)
Ⓑ	Slide deck assembly					
⑭	Loading brake assembly	T	M7	(W1),(L11),(P4)	23	Adjustment
⑮	Guide pin (SUPPLY)	T	M7	(S2)	-	
⑯	Pad arm assembly	T	M7	(W1),(L12),(P5)	22	
⑰	Slide guide plate assembly	T	M7	(S3)	21	Adjustment
⑱	Collar	T	M7	-	11	
⑲	Collar	T	M7	-	11	
⑳	Sub brake assembly	T	M7	(W1),(L13),(P6)	20	
㉑	Control plate assembly	T	M7	(W1),(W4),(L14),(P7)	20	
Ⓒ	Main deck assembly					
㉒	Tension lever assembly	T	M8	-	19	
㉓	Slide lever assembly	T	M8	-	18	
㉔	Brake control lever assembly	T	M8	-	17	
㉕	Loading guide	T	M9	(S2)	-	
㉖	Timing belt	T	M9	-	16	
㉗	Center gear assembly	T	M9	-	-	
㉘	Motor bracket assembly	T	M9	2(S2)	12	
㉙	Worm wheel	T	M9	(W1)	-	(Phase adjustment)
㉚	Gear holder	T	M9	(S2)	-	
㉛	Main cam gear	T	M10	(S2)	15	Phase adjustment
㉜	Brake control plate	T	M10	(L15)	15	Phase adjustment
㉝	Rotary encoder	T	M10	(S2),(W1)	13	Phase adjustment
㉞	Connect gear	T	M10	(W1)	-	(Phase adjustment)
㉟	Reel drive pulley assembly	T	M10	(W2)	-	
㊱	Catcher (T) assembly	T	M11	2(S2)	-	
㊲	Capstan motor	T	M11	2(S2)	-	
㊳	Charge arm assembly	T	M11	(W1)	14	
㊴	Sub cam gear	T	M11	(S2)	-	Phase adjustment
㊵	PWB holder	B	M11	2(S2)	-	

Table 2-2-2



㉘
⑫
⑪
⑨
⑩
㊲
㊱
Ⓒ Main deck assembly
⑬
㉙
㉝
㉒
㉚
㉞
④
⑯
①
Ⓑ Slide deck assembly
㉟
⑦
㉕
③
⑧
㉖
㉔
⑲
⑳
⑮
⑭
⑰
⑱
㉗
⑥
⑤
㉑
②

Fig. 2-2-10 Top view

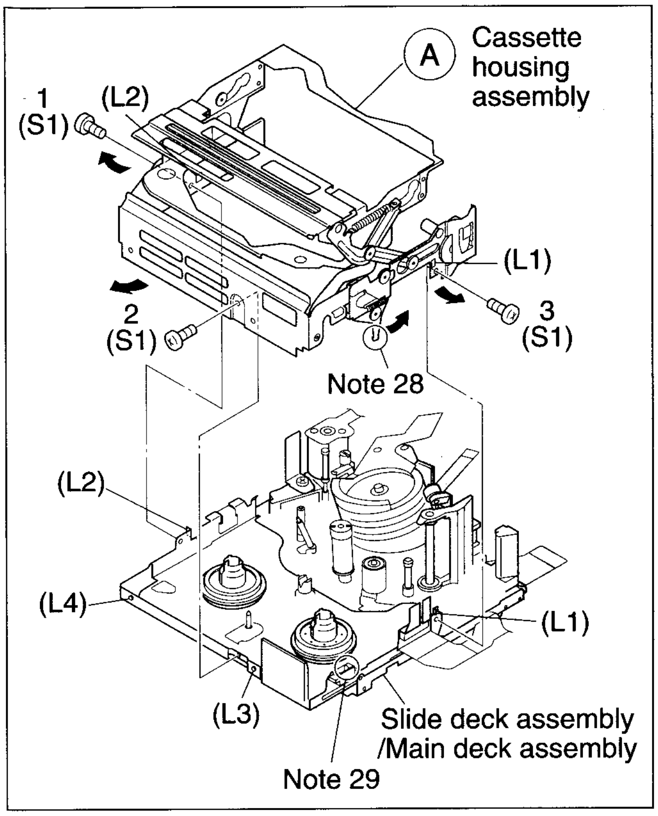


Ⓒ Main deck assembly
(40)
㊴
㊳
Ⓑ Slide deck assembly
㉛
㉜
㉓

Fig. 2-2-11 Bottom view

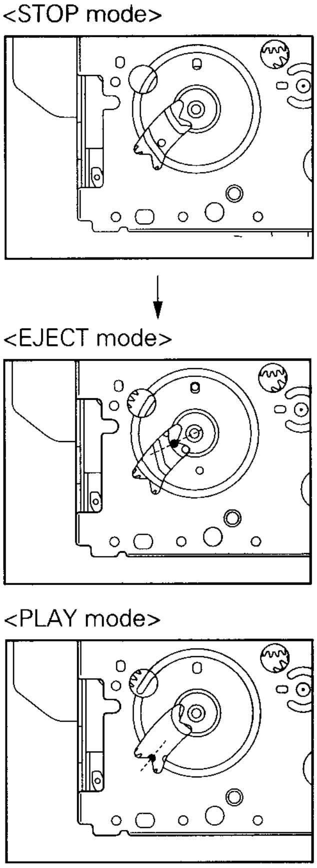
2.2.5 Disassembling/reassembling

1. Ⓐ **Cassette housing assembly**



A
Cassette housing assembly
1
(S1)
(L2)
(L1)
2
(S1)
3
(S1)
Note 28
(L2)
(L4)
(L1)
(L3)
Slide deck assembly /Main deck assembly
Note 29

Fig. M1



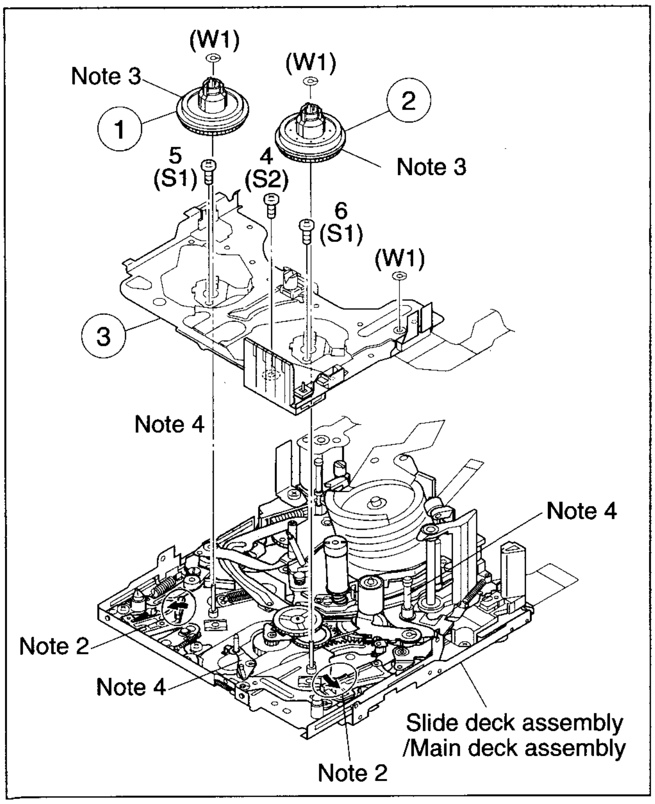
Note 1:
Shift the mechanism mode from the STOP mode to the EJECT mode.

Note 28:
Reassemble the cassette housing assembly to the mechanism as the cancel lever is moved in the direction of the arrow.

Note 29:
When reassembling the cassette housing to the mechanism, make sure that there is no deformation in the frame or no damage to the switches, etc.

Note 30:
After reassembling the component parts, check the mechanism operation in the PLAY mode.
For details of checking method, refer to "2.2.8 Reassembling slide deck assembly and main deck assembly".

2. ① **Reel disk (SUP) assembly**
   ② **Reel disk (TU) assembly**
   ③ **Reel cover assembly**

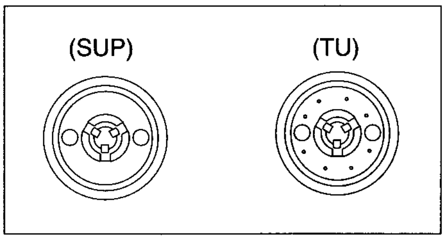


(W1)
Note 3
(W1)
2
1
5
(S1)
4
(S2)
Note 3
6
(S1)
(W1)
3
Note 4
Note 4
Note 2
Note 4
Slide deck assembly /Main deck assembly
Note 2

Fig. M2

Note 2:
When removing the reel disk assembly, be careful not to break the brake pad which applies lateral pressure to the reel disk.

Note 3:
Be careful not to make a mistake in installing the reel disk.
The SUP reel disk and TU reel disk can be distinguished from each other by the appearance as shown below.



Note 4:
When removing the reel cover assembly, pay heed to the guide arm assembly. For, the guide arm assembly is just inserted into the slide deck assembly from the upside and it is apt to come off after the reel cover assembly is removed.
When fastening the reel cover assembly with the screws (No. 5 and 6) for reinstalling it, tighten each screw with the tightening torque of 0.07N·m(0.7kgf·cm).

3. ④ Tension arm assembly/ ⑤ Release guide assembly ⑥ Idler arm assembly/ ⑦ Guide arm assembly ⑧ Pinch roller arm assembly

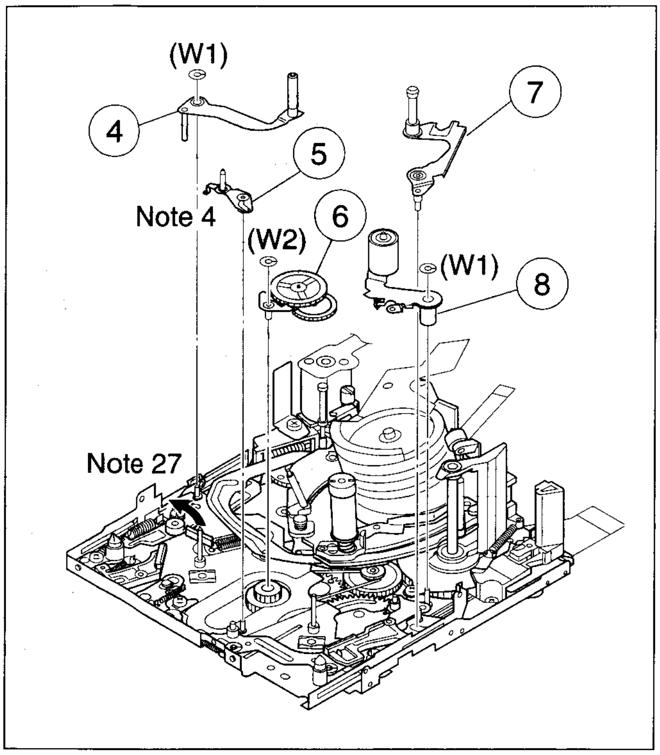
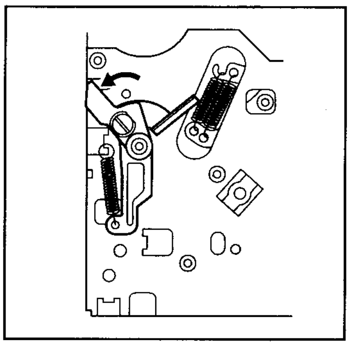


Fig. M3

Note 4:
When removing the reel cover assembly, pay heed to release guide assembly and guide arm assembly. For, the guide arm assembly is just inserted into the slide deck assembly from the upside and it is apt to come off after the reel cover assembly is removed.

Note 27:
Reassemble the tension arm assembly to the mechanism as the pad arm assembly is moved to the extent in the direction of the arrow.



4. ⑨ Cleaner arm assembly/ ⑩ Slant pole arm assembly ⑪ Drum assembly

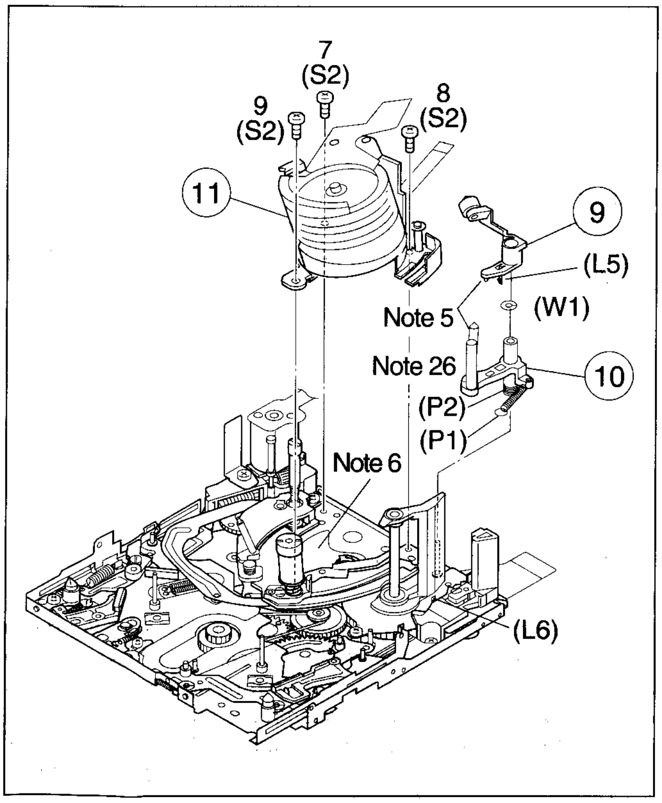
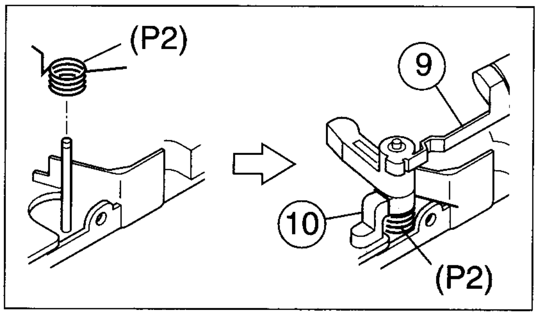


Fig. M4

Note 5:
When removing the cleaner arm assembly, it is recommended to remove the slant pole arm assembly together with it except the case of a single unit replacement, because the hook (L5) is hard to disengage.

Note 6:
When the shield is applied, carefully remove the drum final assembly because the drum is stuck to the shield.

Note 26:
How to set the coil spring (P2).



5. ⑫ Guide roller (SUPPLY) assembly/ ⑬ Rail assembly

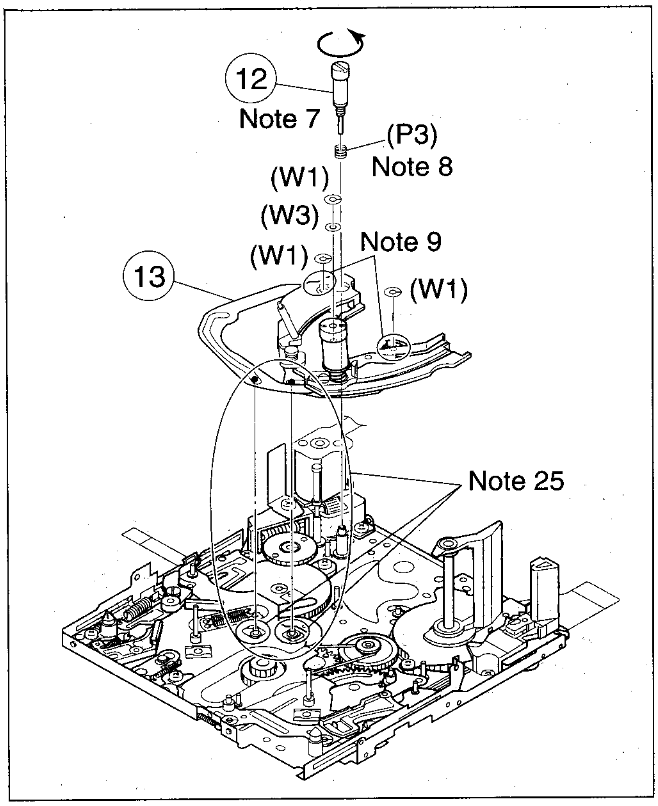


Fig. M5

Note 7:
When removing the rail assembly, remove the guide roller (SUPPLY) assembly beforehand.

Note 8:
Pay careful attention to the spring not to lose it.

Note 9:
Pay careful attention to the engagement of the rail assembly's arm ends because they easily come off the engagement. Moreover, make sure that there is neither deformation nor damage observed in them.

Note 25:
When removing the rail assembly, check to see if the collar is securely set in the arm groove.

6. Ⓑ Slide deck assembly/ Ⓒ Main deck assembly

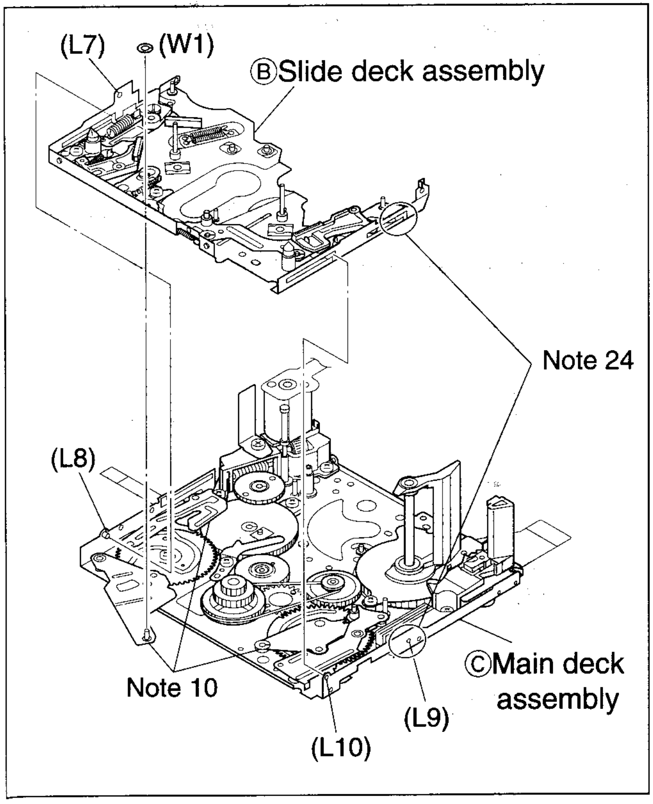
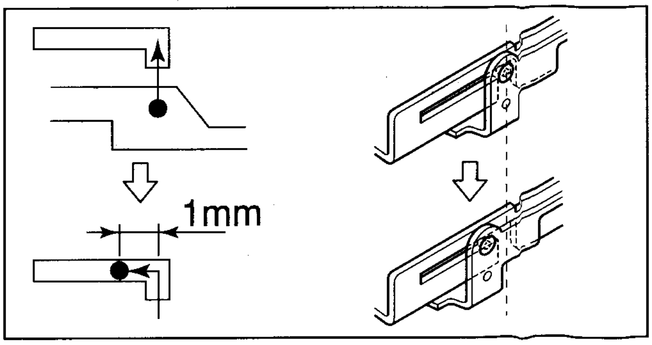


Fig. M6

Note 10:
When removing the slide deck assembly, pay heed to the three components of the following because they are apt to come off after the slide deck assembly is removed.

㉒ *Tension lever assembly/ e Slide lever assembly*
㉔ *Brake control lever assembly*
For reassembling those components, refer to Fig. M8 on page 2-10.

Note 24:
When reassembling the slide deck assembly to the main deck assembly, combine them with each other by the side grooves and then slide the slide deck assembly by 1 mm or so.



7. ⑭ **Loading brake assembly/** ⑮ **Guide pin (S)**
⑯ **Pad arm assembly/** ⑰ **Slide guide plate assembly**
⑱ **Collar/** ⑲ **Collar/** ⑳ **Sub brake assembly**
㉑ **Control plate assembly**

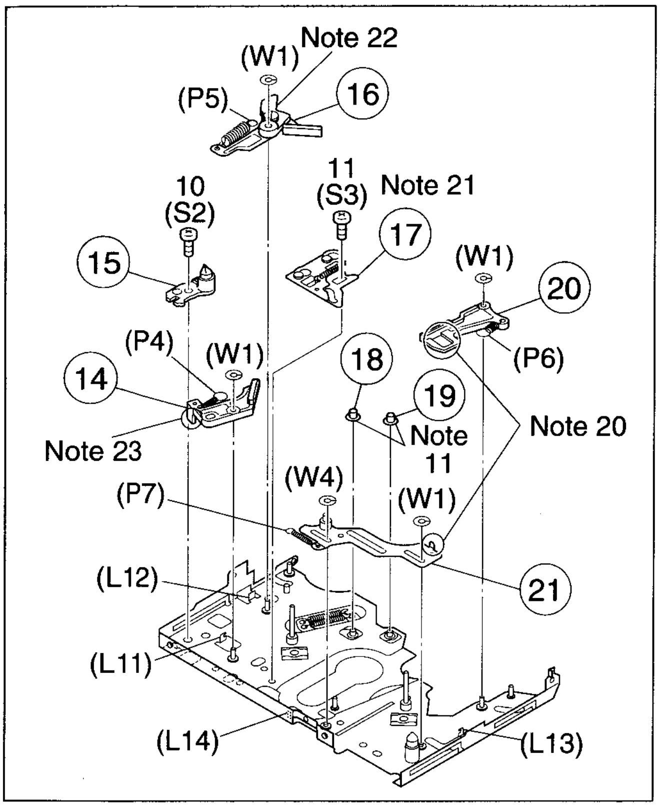


Fig. M7

8. ㉒ **Tension lever assembly/** ㉓ **Slide lever assembly**
㉔ **Brake control lever assembly**

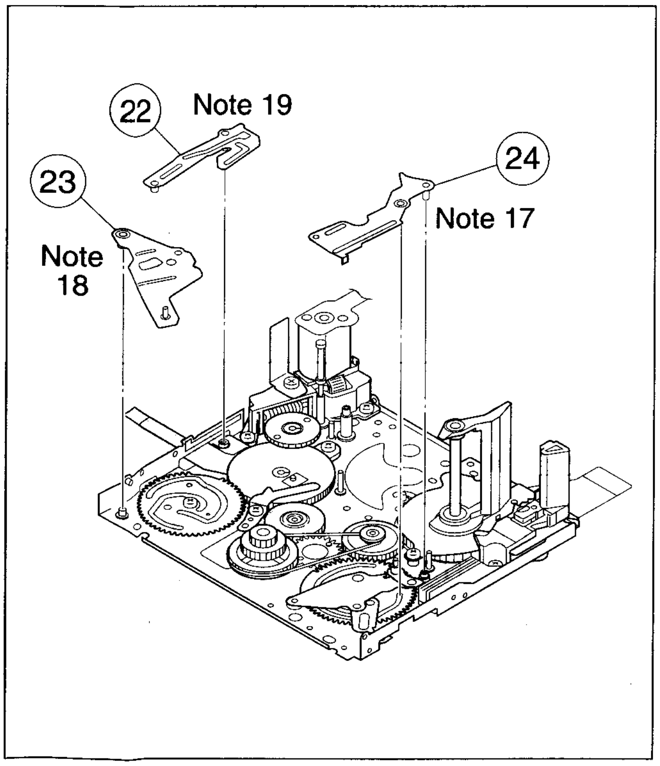
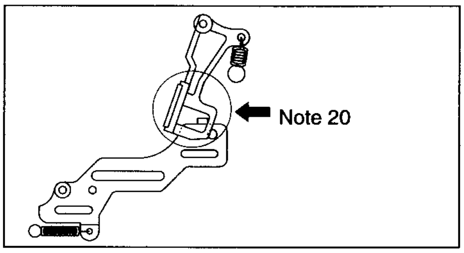


Fig. M8

Note 11:
Don't remove these parts unreasonably. If they are removed for some reason, be very careful not to lose them.

Note 20:
When reinstalling the sub brake assembly, set the control plate assembly so that its hook is set in the # part of the sub brake assembly.



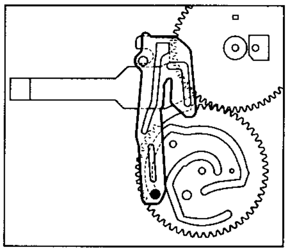
Note 21:
Since the slide guide plate assembly controls the slide deck assembly so that it exactly slides the main deck assembly, it must exactly be assembled in the PLAY mode. Therefore, temporarily fix the slide guide plate assembly in this stage. For details of reassembling procedure, refer to "2.2.8 Reassembling slide deck assembly and main deck assembly" on page 2-15.

Note 22:
The pad arm assembly controls the tension level of the tension arm assembly. For adjustment of the tension arm assembly, refer to page 2-8.

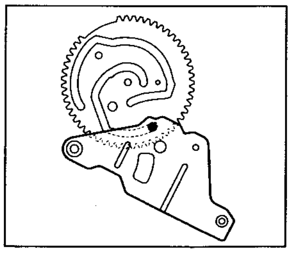
Note 23:
When reinstalling the load brake assembly, slightly lift the slide deck assembly upwards because the lower part of the load brake assembly sticks out of the slide deck assembly.

Note 17, 18, 19:
For refitting the respective parts, refer to the following figures

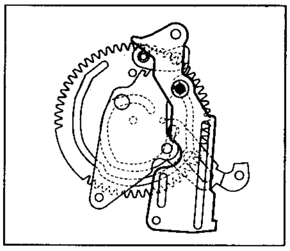
㉒Tension lever assembly



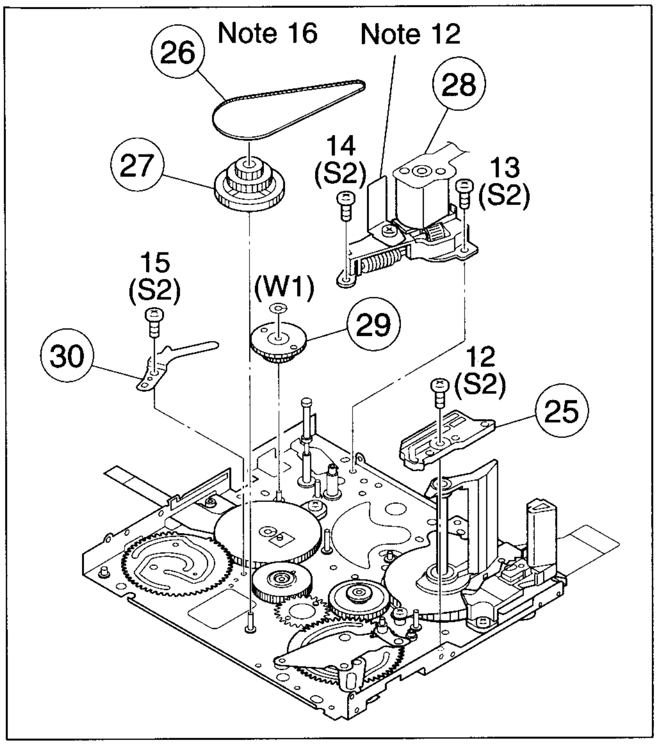
㉓Tension lever assembly



㉔Brake control lever assembly



9. ㉕ Loading guide/ ㉖ Timing belt
㉗ Center gear assembly/ ㉘ Motor bracket assembly
㉙ Worm wheel/ ㉚ Gear holder



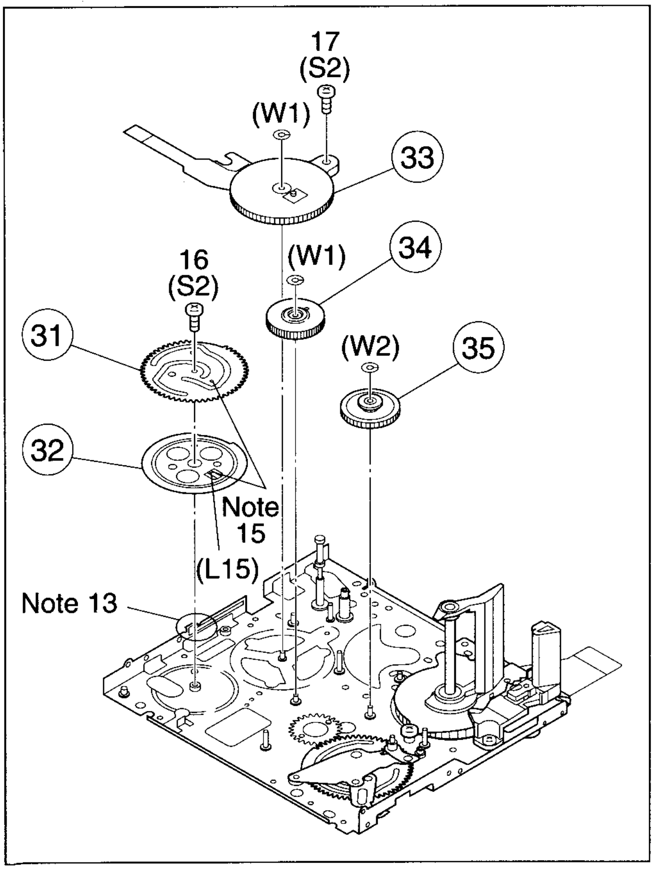
26
Note 16
Note 12
28
27
14
(S2)
13
(S2)
15
(S2)
(W1)
29
30
12
(S2)
25

Fig. M9

Note 12:
Carefully handle the DEW sensor. (Don't touch the sensor surface in particular.)

Note 16:
When engaging the timing belt, make sure that it securely engages with the gears of both the center gear assembly and reel drive pulley assembly.

10. ㉛ Main cam gear/ ㉜ Brake control plate
㉝ Rotary encoder/ ㉞ Connect gear
㉟ Reel drive pulley assembly

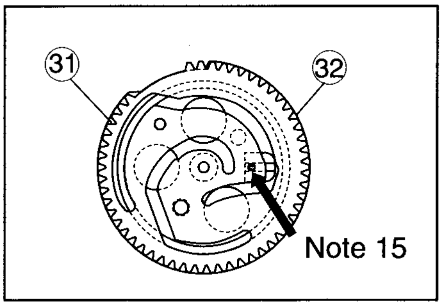


17
(S2)
(W1)
33
16
(S2)
(W1)
34
31
(W2)
35
32
Note
15
(L15)
Note 13

Fig. M10

Note 13:
When removing/refitting parts, pay careful attention to the flexible board and so on not to damage them.

Note 15:
When reinstalling the main cam gear and the brake control plate, first fit them together so that the protrusion on the brake control plate is set in the slot on the main cam gear as shown below, next install the two together to the main deck assembly.



31
32
Note 15

11. ㊱ Catcher (T) assembly/ ㊲ Capstan motor ㊳ Charge arm assembly/ ㊴ Sub cam gear ㊵ PWB holder

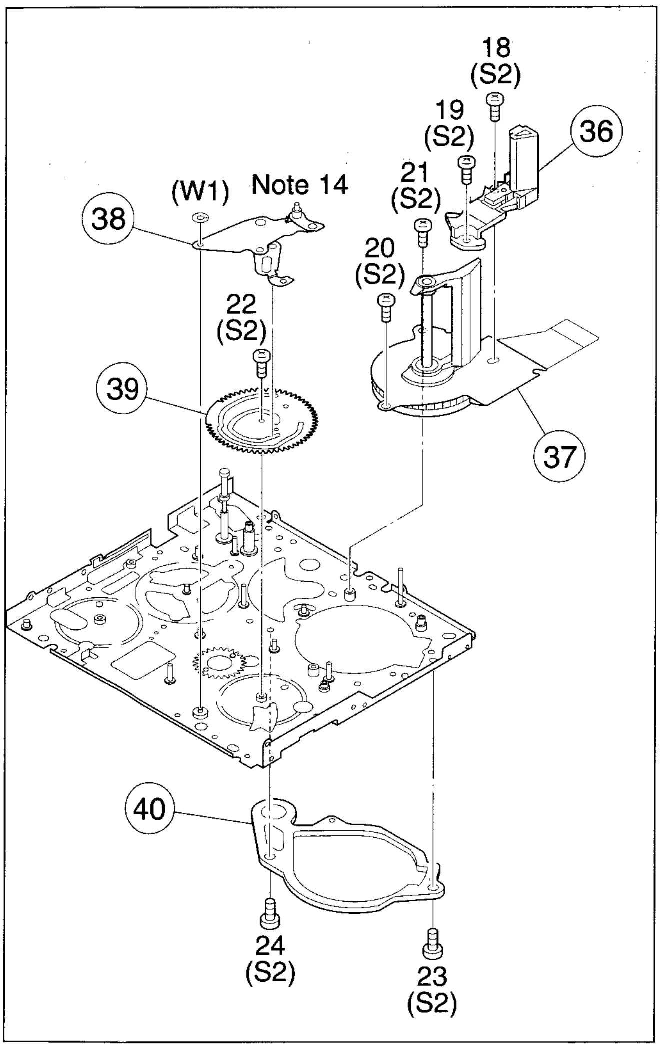
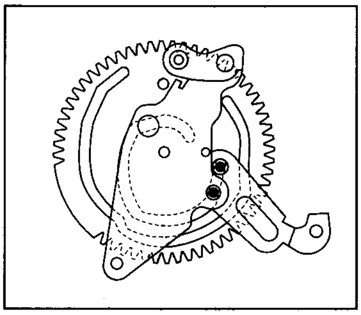

18
(S2)
19
(S2)
36
21
(S2)
(W1)
Note 14
38
20
(S2)
22
(S2)
39
37
40
24
(S2)
23
(S2)

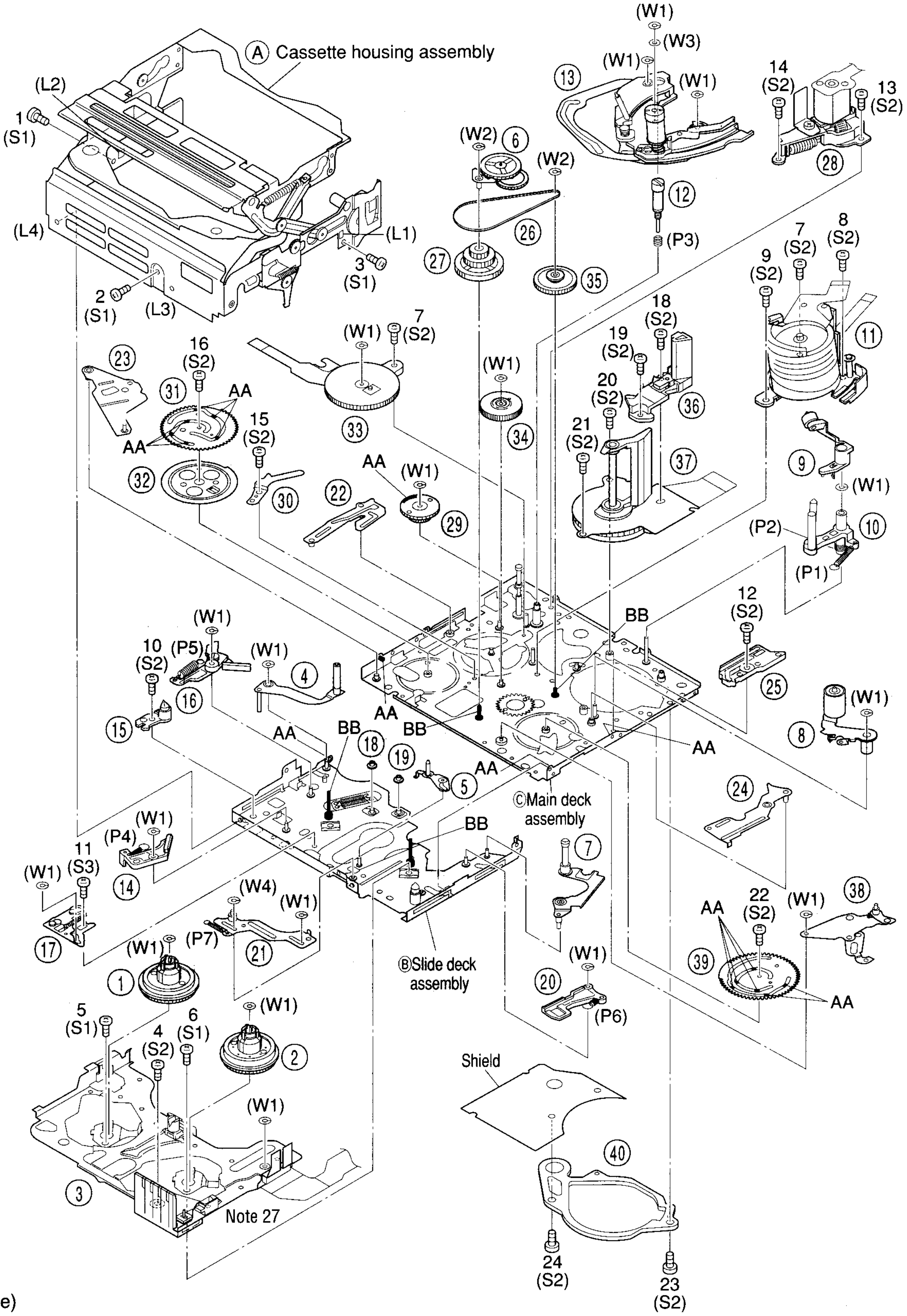
Fig. M11

Note 14:

The following figure shows how to put the charge arm assembly and sub cam gear assembly together.



2.2.6 List of procedures for disassembly

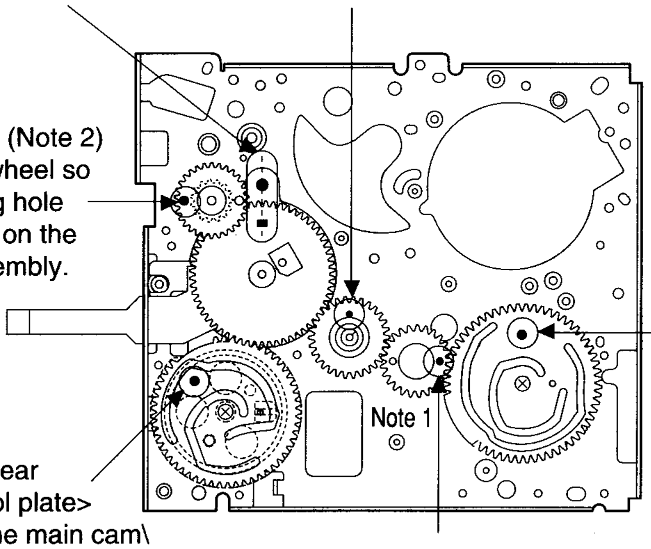

Ⓐ Cassette housing assembly
(L1)
(L2)
(L3)
(L4)
1 (S1)
2 (S1)
3 (S1)
Ⓑ Slide deck assembly
Ⓒ Main deck assembly
Shield
Note 27
① (W1)
② (W1)
③
④ (W1)
⑤
⑥ (W2)
⑦
⑧ (W1)
⑨ (W1)
⑩ (P1) (P2)
⑪
⑫ (P3)
⑬ (W1) (W3)
⑭ (P4) (W1)
⑮
⑯ (P5) (W1)
⑰
⑱
⑲
⑳ (W1) (P6)
㉑ (W4) (W1) (P7)
㉒
㉓
㉔
㉕
㉖
㉗
㉘
㉙ AA (W1)
㉚
㉛ AA
㉜
㉝ (W1)
㉞ (W1)
㉟ (W2)
㊱
㊲
㊳ (W1)
㊴ AA
㊵
4 (S2)
5 (S1)
6 (S1)
7 (S2)
8 (S2)
9 (S2)
10 (S2)
11 (S3)
12 (S2)
13 (S2)
14 (S2)
15 (S2)
16 (S2)
18 (S2)
19 (S2)
20 (S2)
21 (S2)
22 (S2)
23 (S2)
24 (S2)
AA
BB

Note)

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

Fig. 2-2-12

2.2.7 Checkup and adjustment of mechanism phase



<Rotary encoder>
Set the "■" of the rotary part at the tapped hole as shown in the figure.

<Connect gear> (Note 2)
Set the connect gear so that its locating hole meets the hole on the main deck assembly.

<Worm wheel> (Note 2)
Set the worm wheel so that its locating hole meets the hole on the main deck assembly.

<Sub cam gear>
Set the sub cam gear so that its locating hole meets the hole on the main deck assembly. This state represents that the mechanism is in the EJECT mode, which is the "mechanism assembly mode".

<Main cam gear /Brake control plate>
After fitting the main cam\ gear and brake control plat together,set them together so that their locating holes meet the hole on the main \ deck assembly.

<Connect gear 2> (Note 2)
Set the connect gear 2 so that its locating hole meets the hole on the main deck assembly.

Note 1:
Since the connect gear 2 is tightly fixed to the main deck by caulking, adjust its phase with the connect gear and sub cam gear.

Note 2:
The part that needs phase adjustment by the hole on the main deck assembly must exactly be set as the specified phase. There is a fear that some part is installed in a wrong phase because assembling of the mechanism is automated. If so, set every part in the correct phase whenever the mechanism is reassembled.

Fig. 2-2-13

2.2.8 Reassembling slide deck assembly and main deck assembly

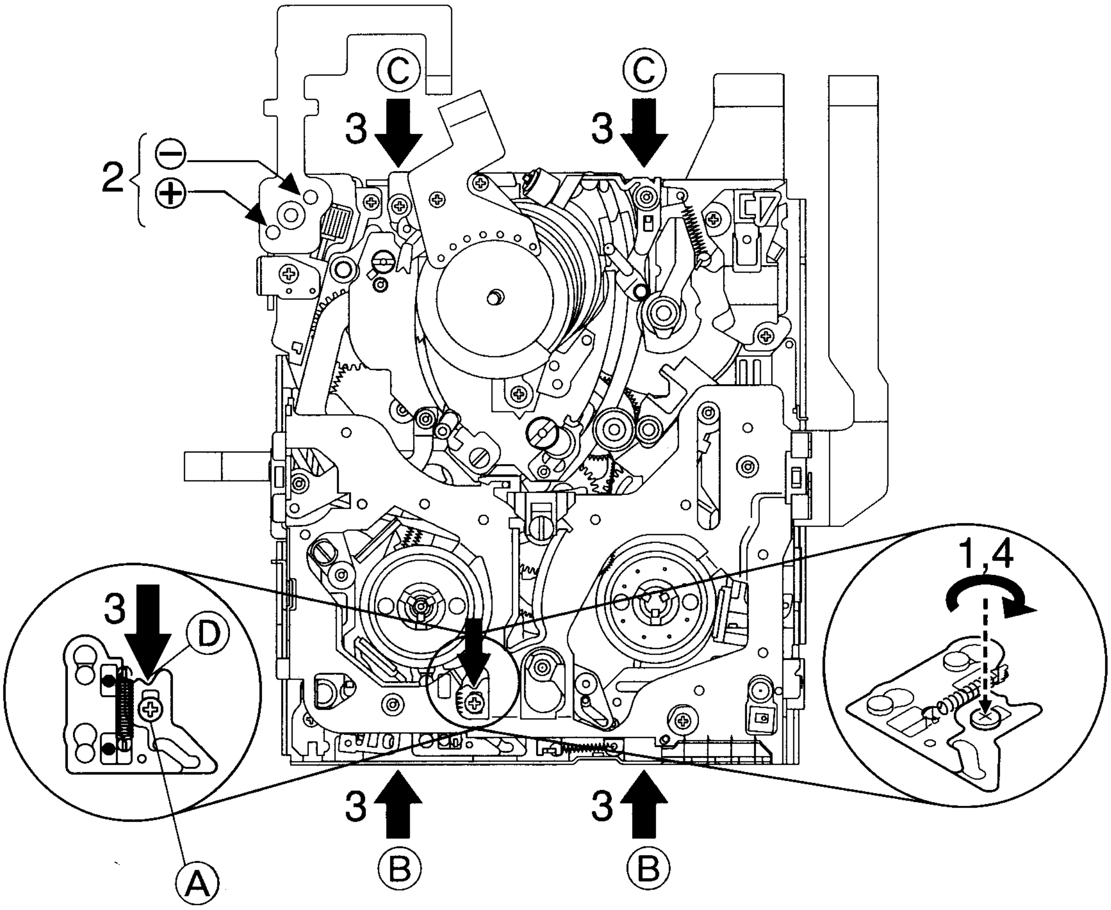


Fig. 2-2-14

Reassembling procedure

1. Loosen the screw Ⓐ.
2. Set the mechanism in the PLAY mode. (Refer to page 2-2.)
3. Press the end face B of the slide deck assembly (reel disk side) and the end face Ⓒ of the main deck assembly (drum assembly side) with uniform force so that the two assemblies are tightly pressed to each other. Furthermore, press the part Ⓓ and tighten the screw Ⓐ.

Note : *Tightening torque for screw Ⓐ: 0.03 N·m (0.3 kgf·cm)*

2.2.9 Locating tension pole

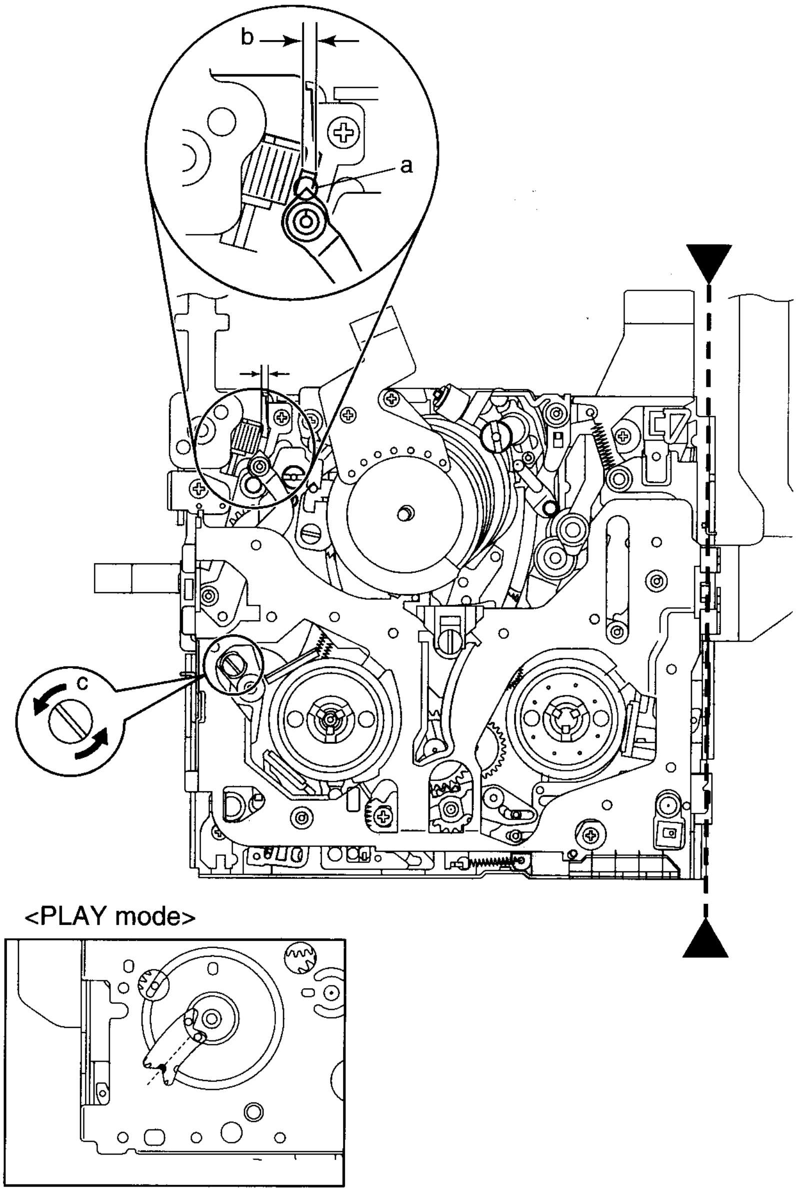


Fig. 2-2-15

Locating procedure

1. Enter the mechanism assembly into the PLAY mode. (Refer to page 2-2.)
2. When the " ▶-----◀ " part is positioned down, make sure that the part "a" of the tension arm assembly is located within the range of "b".
3. If the part "a" is out of the range, turn the pin "c" to adjust the position.

2.3 PROCEDURE OF COMPATIBILITY AND P.B. EQ. (ERROR RATE) ADJUSTMENTS

2.3.1 Precautions

Prior to starting disassembling and adjusting work, be sure to make a backup copy of the data stored in the EEPROM (IC1003 on the MAIN board) for the "EEPROM utility" of the SSS software.

Table 2-3-1 shows important service points for adjustment of P.B. EQ. (error rate).

Adjustment item / Service point	Linearity adjustment	P.B. Switching Point adjustment	Head Recording Current adjustment	Error rate (P.B. EQ). adjustment (SP/LP)
Replacement of DRUM	Necessary **Note 1**	Necessary	Necessary	Necessary
Replacement of parts of tape transport system	Necessary **Note 1**	Unnecessary	Unnecessary	Check
Repair of parts of tape transport system (DRUM)	Necessary **Note 1**	Unnecessary	Unnecessary	Check
Replacement of IC3501 (SECOND board, PRE/REC amp)	Unnecessary	Unnecessary	Necessary	Check
Replacement of MAIN BOARD **Note 2**	Unnecessary	Necessary	Necessary	Necessary

Table 2-3-1

Note 1: *Linearity adjustment is needed only after replacement of the drum or replacement/repair of the TU/SUP guide rail.*

Note 2: *After replacement of the MAIN board, be sure to write the original data on the EEPROM of the new MAIN board. After data writing, adjust the camera section. When the MAIN board is replaced for the reason of communication failure, install the original EEPROM on the new MAIN board.*

If adjustment is needed for two or more items, proceed in adjustment of respective items in the following order.

2.3.3 Linearity adjustment

↓

2.3.4 PB switching point adjustment

↓

2.3.5 Head REC current adjustment

↓

2.3.6 P.B. EQ. (error rate) adjustment (both in SP and LP)

2.3.2 Adjustment standard

Note : *For details of the test instruments, tools and jigs required for adjustment, refer to pages 1-2, 1-3 and 2-1 of this manual.*

1. Remove the cover (CC).

Note : *Carefully remove the cover not to scratch the exterior of the camera. Since the cover (CC) shall be restored to the original position after adjustment, be very careful not to soil its adhesive surface.*

2. Open the monitor assembly. Remove two screws (1, 2) and then remove the upper case (2).
3. Remove one screw (3) and then remove the cover (jig).

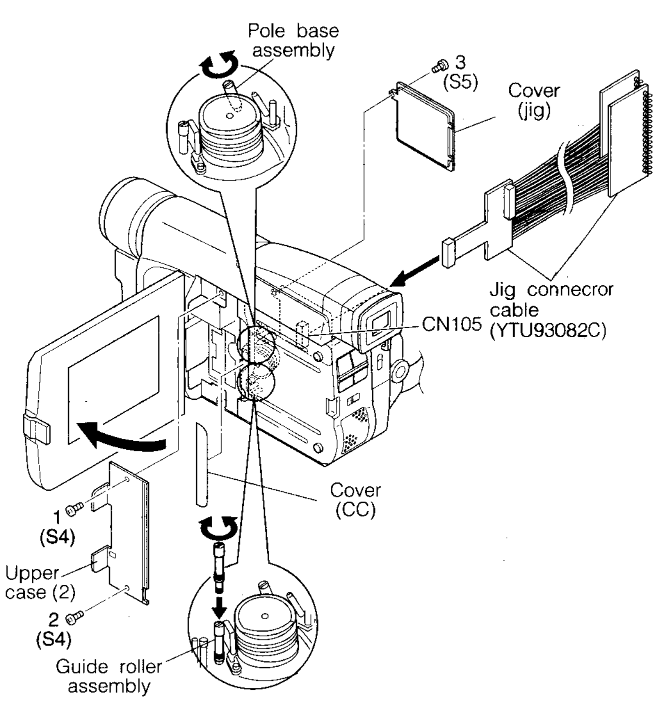
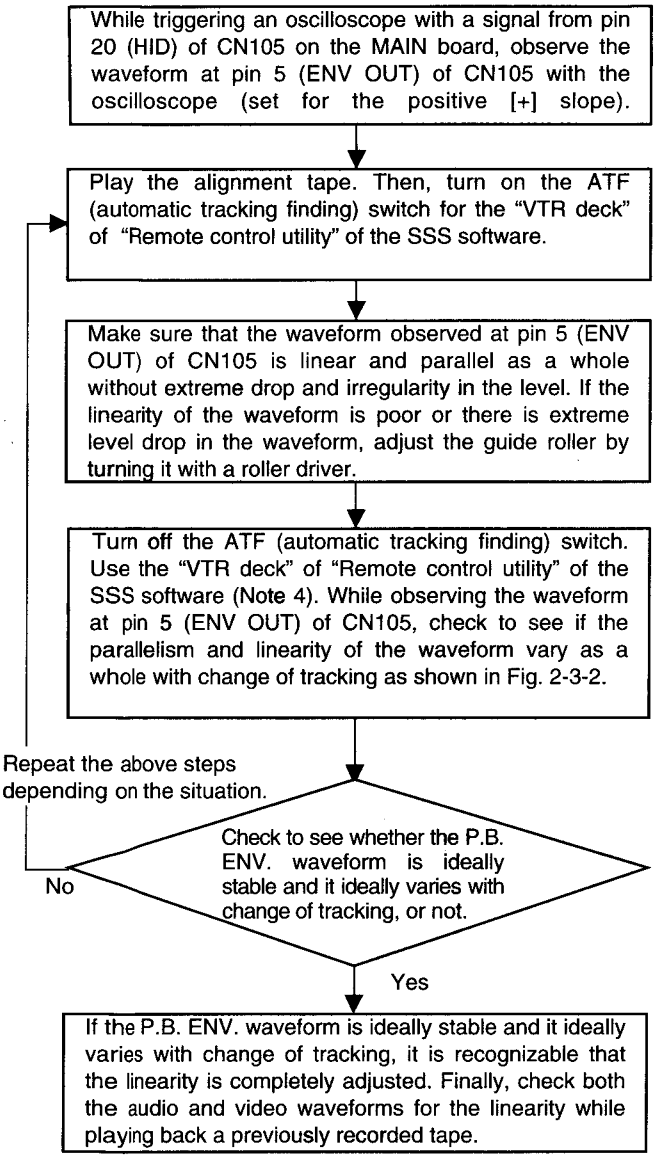


Fig. 2-3-1

2.3.3 Linearity adjustment

Procedure of linearity adjustment is shown by the following flowchart.



While triggering an oscilloscope with a signal from pin 20 (HID) of CN105 on the MAIN board, observe the waveform at pin 5 (ENV OUT) of CN105 with the oscilloscope (set for the positive [+] slope).

Play the alignment tape. Then, turn on the ATF (automatic tracking finding) switch for the "VTR deck" of "Remote control utility" of the SSS software.

Make sure that the waveform observed at pin 5 (ENV OUT) of CN105 is linear and parallel as a whole without extreme drop and irregularity in the level. If the linearity of the waveform is poor or there is extreme level drop in the waveform, adjust the guide roller by turning it with a roller driver.

Turn off the ATF (automatic tracking finding) switch. Use the "VTR deck" of "Remote control utility" of the SSS software (Note 4). While observing the waveform at pin 5 (ENV OUT) of CN105, check to see if the parallelism and linearity of the waveform vary as a whole with change of tracking as shown in Fig. 2-3-2.

Repeat the above steps depending on the situation.

Check to see whether the P.B. ENV. waveform is ideally stable and it ideally varies with change of tracking, or not.

If the P.B. ENV. waveform is ideally stable and it ideally varies with change of tracking, it is recognizable that the linearity is completely adjusted. Finally, check both the audio and video waveforms for the linearity while playing back a previously recorded tape.

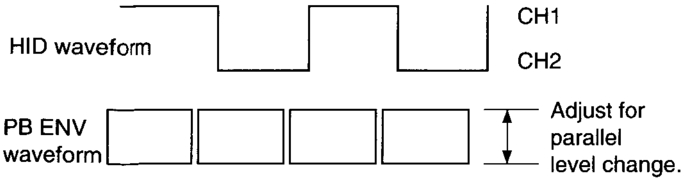


Fig. 2-3-2

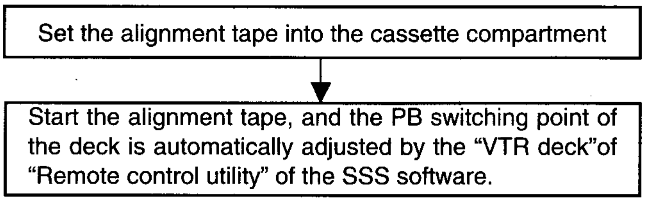
Note 3: *In case of the VHS tape recorder, the first tracking point can be locked by means of CTL pulse and DRUM FF when the automatic tracking (AT) function is off, because the VHS tape recorder has an A/C head. Therefore, the linearity of the VHS tape recorder is adjustable even when the AT is off.*

On the other hand, the linearity of the DVC cannot be adjusted when the automatic tracking finding (ATF) function is inactivated, because the DVC has no A/C head. When the ATF of the DVC is off, its tracking operation is effectuated only for the speed control system. Therefore, as time elapses, the DVC gradually fails in the servo control and it becomes hard to adjust the linearity.

Note 4: *In practice, if linearity adjustment is performed within a few minutes after the ATF is switched off, the state (ATF off) may be left out of consideration, because the speed servo of the DVC functions when the ATF is off.*

2.3.4 PB switching point adjustment

Procedure of PB switching point adjustment is shown by the following flowchart.

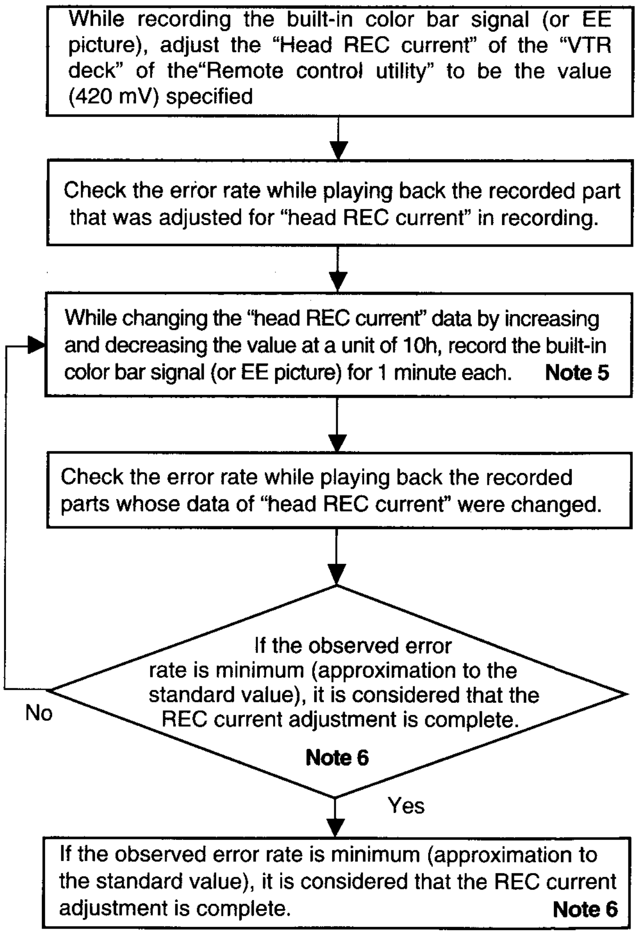


Set the alignment tape into the cassette compartment

Start the alignment tape, and the PB switching point of the deck is automatically adjusted by the "VTR deck"of "Remote control utility" of the SSS software.

2.3.5 Head REC current adjustment

Procedure of head REC current adjustment is shown by the following flowchart.



While recording the built-in color bar signal (or EE picture), adjust the "Head REC current" of the "VTR deck" of the"Remote control utility" to be the value (420 mV) specified

Check the error rate while playing back the recorded part that was adjusted for "head REC current" in recording.

While changing the "head REC current" data by increasing and decreasing the value at a unit of 10h, record the built-in color bar signal (or EE picture) for 1 minute each. **Note 5**

Check the error rate while playing back the recorded parts whose data of "head REC current" were changed.

If the observed error rate is minimum (approximation to the standard value), it is considered that the REC current adjustment is complete. **Note 6**

If the observed error rate is minimum (approximation to the standard value), it is considered that the REC current adjustment is complete. **Note 6**

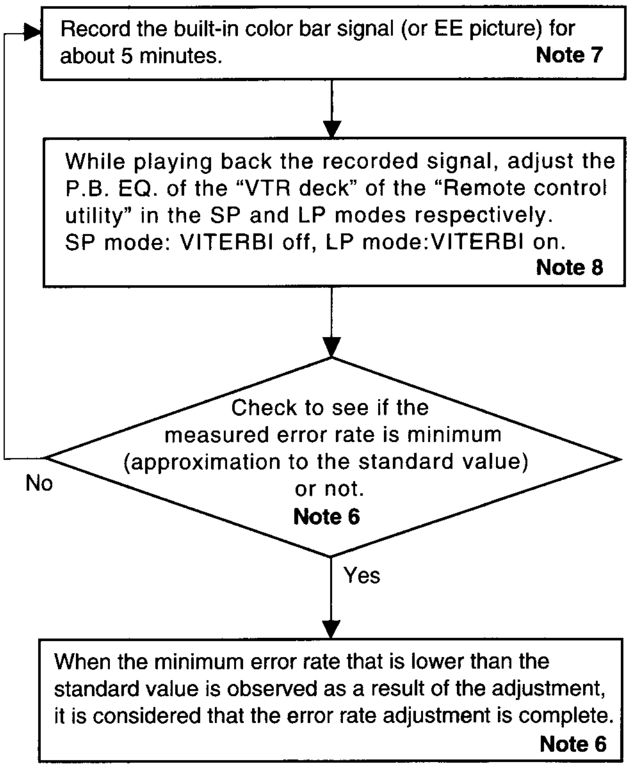
If the minimum error rate does not approximate to the standard value (see Note 7) in spite of repeated adjustments, clean the head and tape transport system. If cleaning has no effect on improvement of the error rate, it is thinkable that there is a failure in the head or the preamp shield, or the P.B. EQ. (error rate) is incompletely adjusted. In such the case, try to proceed in P.B. EQ. adjustment with the alignment tape prior to adjustment of "head REC current". In other words, if there is something abnormal in the playback system, the indication of the error rate is meaningless. Therefore, it is recommended to perform the "P.B. EQ. (error rate) adjustment" roughly with the alignment tape after completion of the "linearity adjustment" (to adjust error rate to be almost approximate to the standard value), because it facilitates the adjustment of the "head REC current".

Note 5: *IThe value of the "head REC current" specified on the software is not always optimum.*

Note 6: *In the strict sense of the word, "approximation to the standard value" means a value that is slightly lower than the specified value. Specified values are as follows.*
CH1 or CH2: Less than 1,500 (less than 3,000 in total of CH1 and CH2) with the VITERBI function off.
Difference between channels: Less than 10 times between CH1 and CH2.

2.3.6 P.B. EQ. (error rate) adjustment (for SP and LP)

Procedure of P.B. EQ. (error rate) adjustment is shown by the following flowchart.


Record the built-in color bar signal (or EE picture) for about 5 minutes. Note 7
While playing back the recorded signal, adjust the P.B. EQ. of the "VTR deck" of the "Remote control utility" in the SP and LP modes respectively.
SP mode: VITERBI off, LP mode:VITERBI on.
Note 8
Check to see if the measured error rate is minimum (approximation to the standard value) or not.
Note 6
No
Yes
When the minimum error rate that is lower than the standard value is observed as a result of the adjustment, it is considered that the error rate adjustment is complete.
Note 6

Note 7: *IIt is advised to use a new cassette tape or an unrecorded part of a used cassette tape for recording. If a damaged tape is used for recording, it results not only in an error of the error rate measurement (measurement result becomes considerably higher than the real value) but also in loss of the reliability of adjustment.*

Note 8: *Switch off the VITERBI function in the playback mode, because it can be switched off in the playback mode only. If the VITERBI function is switched off in the playback mode, the switched-off status is automatically cancelled when playback is discontinued. Therefore, it is required to switch off the VITERBI function in every playback operation.*

2.3.7 Measurement method of P.B. EQ. (error rate)

Neither error rate jig (YTU93083) nor frequency counter is needed. Error rate is shown on the service support in three ways of video CH1, CH2 and total. When measuring error rate by channel, total the video and audio error rates on the same channel.

2.4 SERVICE NOTE

Use the following chart to manage mechanism parts that are removed for disassembling the mechanism.

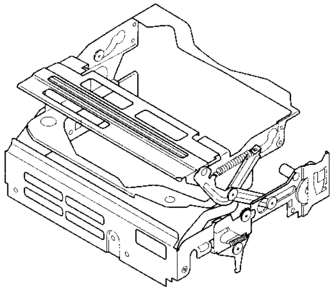
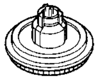
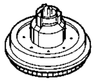
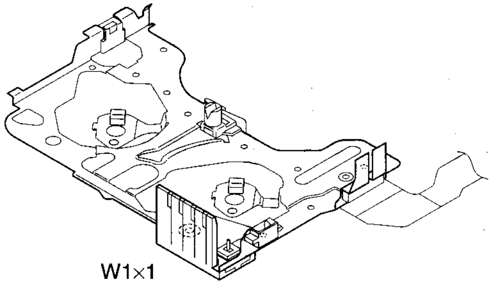
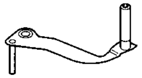
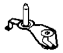
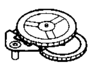
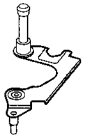
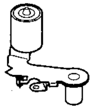
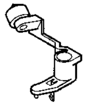
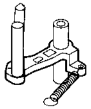
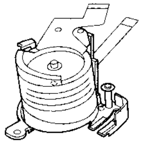
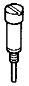
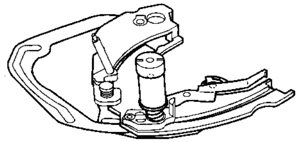
1	Ⓐ Cassette housing assembly		S1×3
2	① Reel disk (SUP) assembly		W1×1
	② Reel disk (TU) assembly		W1×1
	③ Reel cover assembly		S1×2 S2×1 W1×1
3	④ Tension arm assembly		W1×1
	⑤ Release guide assembly		
	⑥ Idler arm assembly		W2×1
	⑦ Guide arm assembly		
	⑧ Pinch roller arm assembly		W1×1
4	⑨ Cleaner arm assembly		
	⑩ Slant pole arm assembly		W1×1 P1×1 P2×1
	⑪ Drum assembly		S2×3
5	⑫ Guide roller (S) assembly		P3×1
	⑬ Rail assembly		W1×3, W3×1

Table 2-4-1

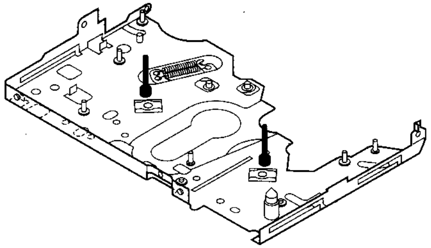
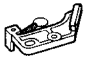
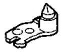
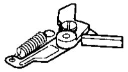
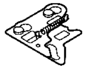
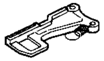
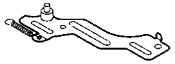
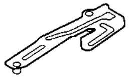
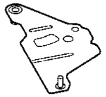
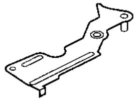
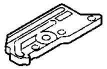
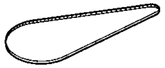
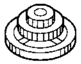
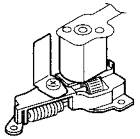
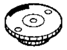
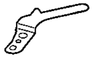
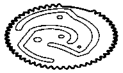
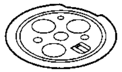
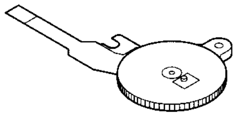
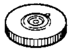
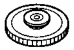
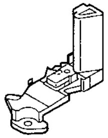
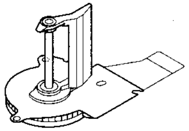
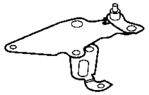
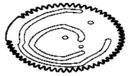
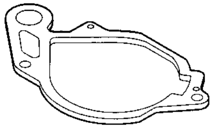
6	Ⓑ Slide deck assembly		W1×1
7	⑭ Loading brake assembly		W1×1 P4×1
	⑮ Guide pin (SUPPLY)		S2×1
	⑯ Pad arm assembly		W1×1 P5×1
	⑰ Slide guide plate assembly		S3×1
	⑱ Collar		
	⑲ Collar		
	⑳ Sub brake assembly		W1×1 P6×1
	㉑ Control plate assembly		W1×1, W4×1, P7×1
8	㉒ Tension lever assembly		
	㉓ Slide lever assembly		
	㉔ Brake control lever assembly		
9	㉕ Loading guide		S2×1
	㉖ Timing belt		
	㉗ Center gear assembly		
	㉘ Motor bracket assembly		S2×2
	㉙ Worm wheel		W1×1
	㉚ Gear holder		S2×1
10	㉛ Main cam gear		S2×1
	㉜ Brake control plate		
	㉝ Rotary encoder		S2×1 W1×1
	㉞ Connect gear		W1×1
	㉟ Reel drive pulley assembly		W2×1
11	㊱ Catcher (T) assembly		S2×2
	㊲ Capstan motor		S2×2
	㊳ Charge arm assembly		W1×1
	㊴ Sub cam gear		S2×1
	㊵ PWB holder		S2×2

Table 2-4-2

2.5 JIG CONNECTOR CABLE (YTU93082C) CONNECTION

Remove one screw (1) and then remove the cover (jig).

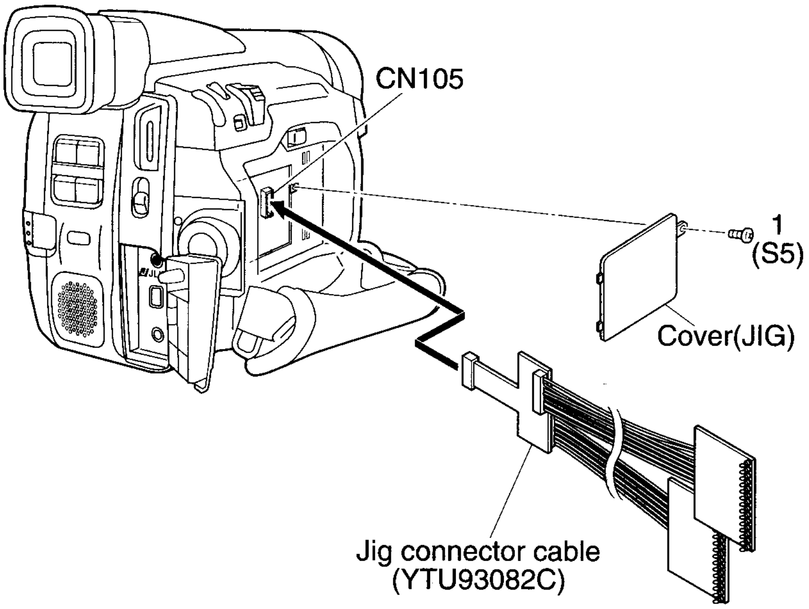

CN105
1
(S5)
Cover(JIG)
Jig connector cable
(YTU93082C)

Fig. 2-5-1

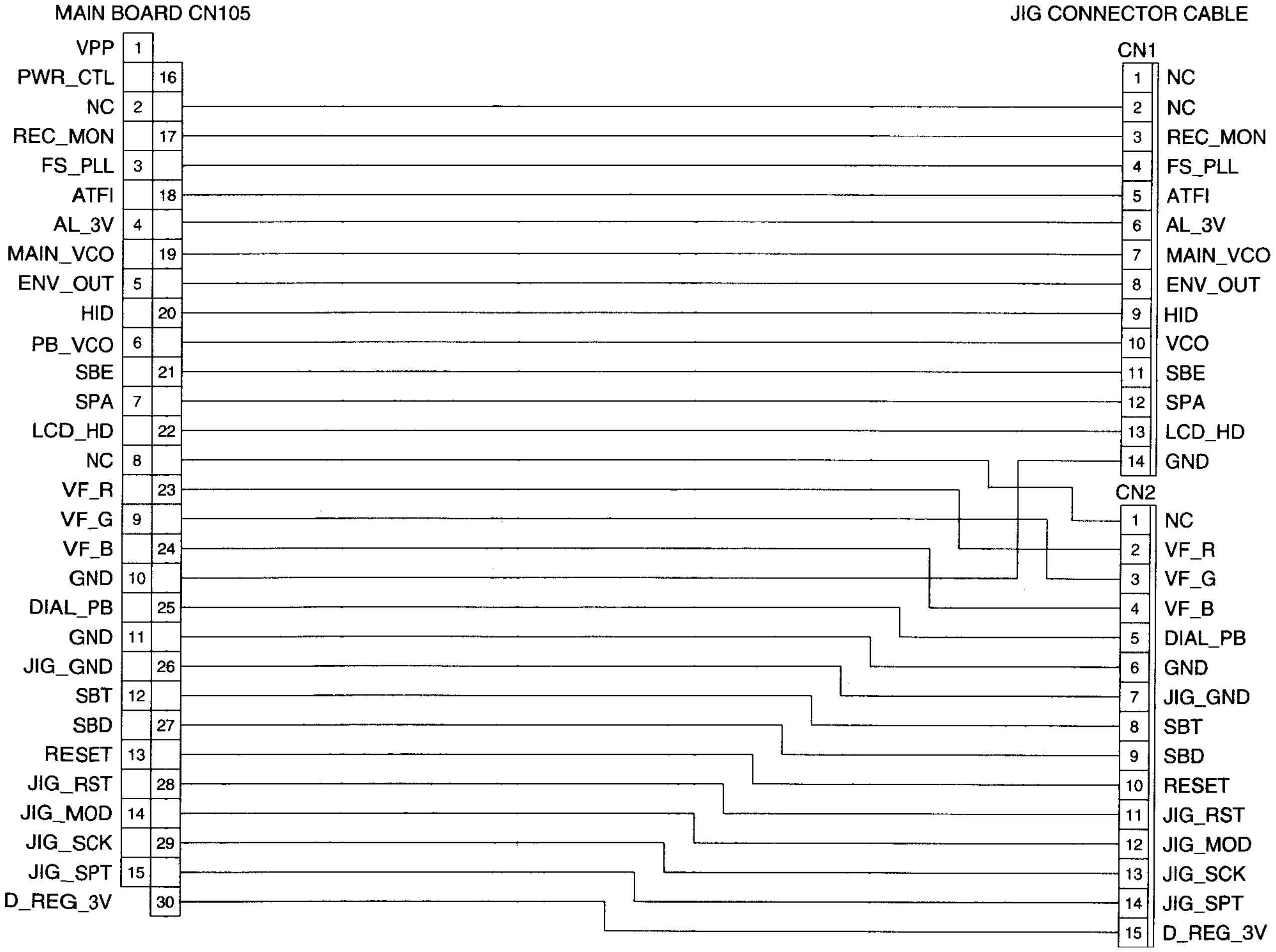

MAIN BOARD CN105
VPP 1
PWR_CTL 16
NC 2
REC_MON 17
FS_PLL 3
ATFI 18
AL_3V 4
MAIN_VCO 19
ENV_OUT 5
HID 20
PB_VCO 6
SBE 21
SPA 7
LCD_HD 22
NC 8
VF_R 23
VF_G 9
VF_B 24
GND 10
DIAL_PB 25
GND 11
JIG_GND 26
SBT 12
SBD 27
RESET 13
JIG_RST 28
JIG_MOD 14
JIG_SCK 29
JIG_SPT 15
D_REG_3V 30
JIG CONNECTOR CABLE
CN1
1 NC
2 NC
3 REC_MON
4 FS_PLL
5 ATFI
6 AL_3V
7 MAIN_VCO
8 ENV_OUT
9 HID
10 VCO
11 SBE
12 SPA
13 LCD_HD
14 GND
CN2
1 NC
2 VF_R
3 VF_G
4 VF_B
5 DIAL_PB
6 GND
7 JIG_GND
8 SBT
9 SBD
10 RESET
11 JIG_RST
12 JIG_MOD
13 JIG_SCK
14 JIG_SPT
15 D_REG_3V

Fig. 2-5-2

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR). General deck system, camera system and monitor system adjustment are not required. However, if MAIN board and MONITOR board need replacement, please use original E^{2}PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-3). Please contact to JVC Service for detaile information.

- OP block
- E^{2}PROM (IC1003 of MAIN board)
- MONITOR
- E^{2}PROM (IC7603 of MONITOR board)

Note: *For B/W VF assembly adjustment is needed VRs.*

In the event of malfunction with electrical circuits, troubleshooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between operation un it and DECK chassis.

2. Required test equipment

1. Color TV monitor.
2. AC power adapter
3. Oscilloscope (dual-trace type, observable 100 MHz or higher frequency)

Note: *It is recommended to use one observable 300 MHz or higher frequency.*

4. Digital voltmeter
5. Frequency counter (with threshold level adjuster)
6. Personal computer

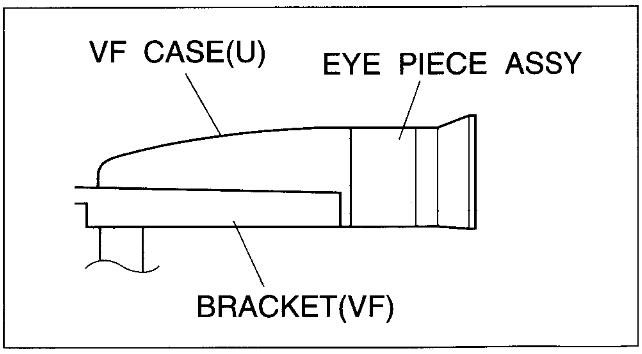
3. Required adjustment tools

For detsails of special jigs necessary for adjustment, refer to page 1-2 and 1-3 of the Section 1.

3.2 E. VF SECTION ADJUSTMENT (B/W VF ONLY)

Referring to "SEC. 1 DISASSEMBLY" and connect the E.VF FPC to CN104 of the MAIN board.

Note: *This adjustment can be carried out in the condition that only the exterior part (EYE PIECE ASSY, VF CASE [U]) is removed from the viewfinder. With meticulous care not to damage any part, remove the VF case (U) and expose the VF board assembly by taking it out and carry out this adjustment using the patch cord for connection.*



3.3 SETUP

1. Setup for electrical adjustment with personal computer

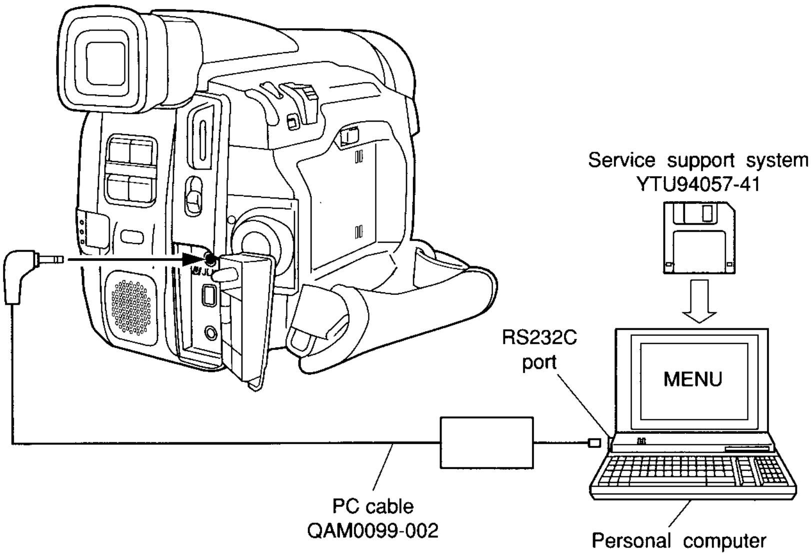


Fig. 3-3-1 Connection for Service support system (1)

2. Setup with patch cords and jig connector cables

NOTE:

Fig. 3-3-2 shows an example of expansion setup that facilitates inspection of major boards because main components are connected by means of patch cords and jig cables. For proceeding to electrical adjustment in such the setup, disassemble the set at a certain level required for the current adjustment objectives referring to the section 1 "DISASSEMBLY" and properly set up the expanded set and test instruments.

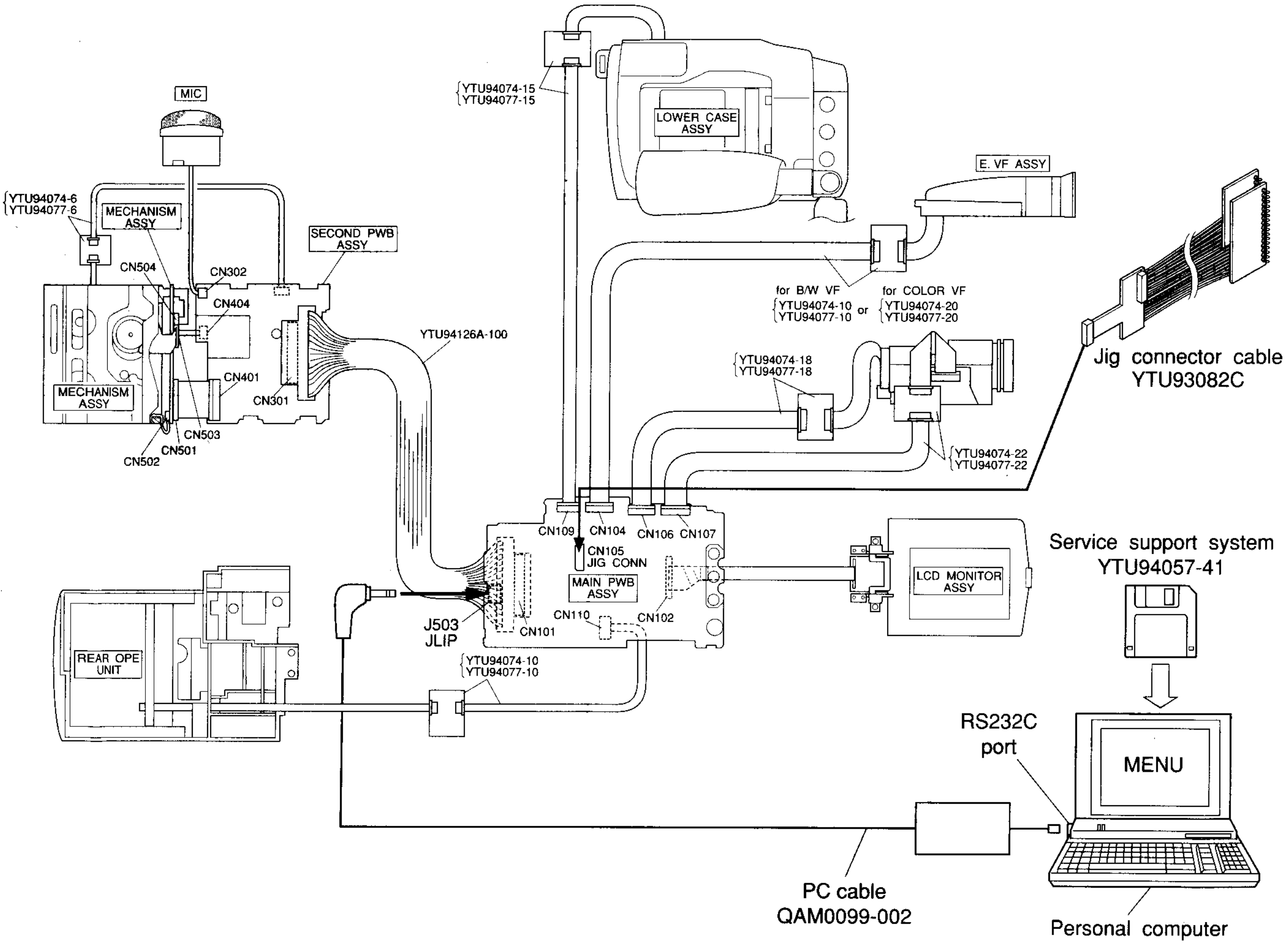

MIC
YTU94074-6
YTU94077-6
MECHANISM ASSY
SECOND PWB ASSY
CN504
CN302
CN404
CN401
CN301
MECHANISM ASSY
CN503
CN501
CN502
YTU94074-15
YTU94077-15
LOWER CASE ASSY
E. VF ASSY
YTU94126A-100
for B/W VF
YTU94074-10
YTU94077-10
or
for COLOR VF
YTU94074-20
YTU94077-20
YTU94074-18
YTU94077-18
Jig connector cable
YTU93082C
YTU94074-22
YTU94077-22
CN109
CN104
CN106
CN107
CN105
JIG CONN
MAIN PWB ASSY
CN110
CN102
CN101
J503
JLIP
LCD MONITOR ASSY
Service support system
YTU94057-41
REAR OPE UNIT
YTU94074-10
YTU94077-10
RS232C port
MENU
PC cable
QAM0099-002
Personal computer

Fig. 3-3-2 Setup for electrical adjustment with personal computer (2)

3.4 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT

Notes: *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*

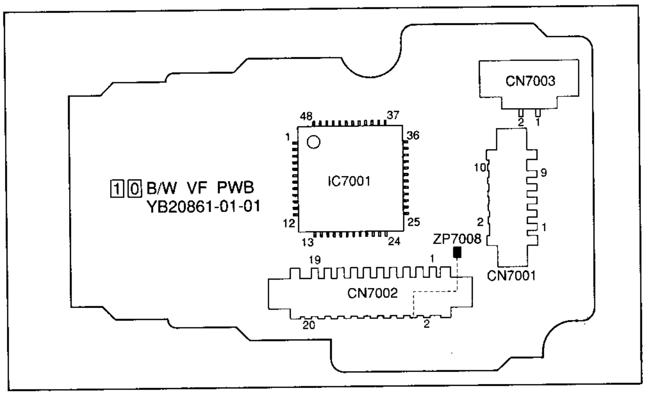

CN7003
48
37
1
36
2
1
IC7001
10
9
12
25
2
1
13
24
ZP7008
19
1
CN7002
CN7001
20
2
10 B/W VF PWB
YB20861-01-01

Fig. 3-4-1 E. VF board (A)

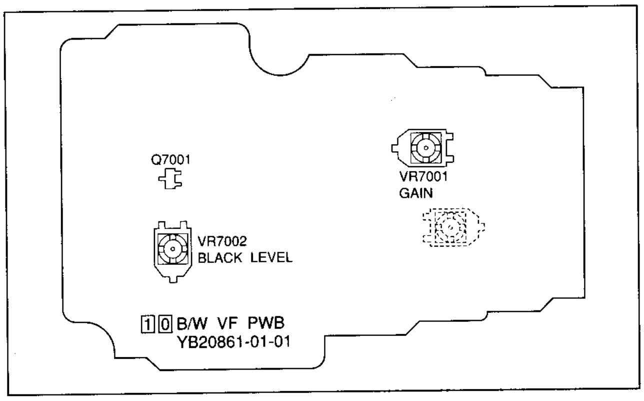

Q7001
VR7001
GAIN
VR7002
BLACK LEVEL
10 B/W VF PWB
YB20861-01-01

Fig. 3-4-2 E. VF board (B)

3.4.1 Black level

Subject	• Camera picture • Gray scale
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• CN7002 pin 4 (VIDLO)
Adjustment part	• VR7002 (Black level)
Specification	• "A"=2.5 ± 0.05 VDC

1) Observe waveform at pin 4 of the CN7002.
2) Adjust VR7002 so that DC level of "A" (between the pedestal level and GND, see Fig. 3-4-3) of a waveform becomes 2.5 ± 0.05 V DC.

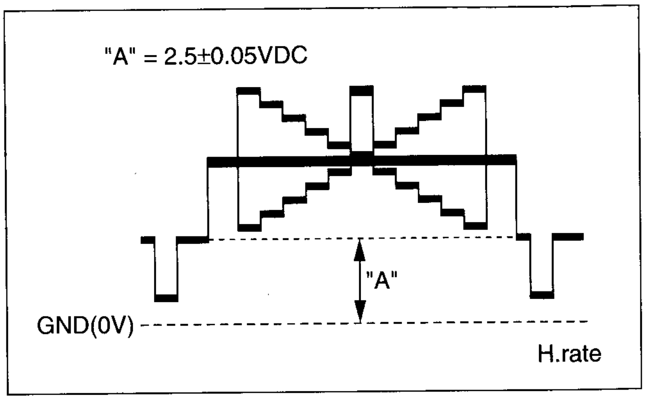

"A" = 2.5±0.05VDC
"A"
GND(0V)
H.rate

Fig. 3-4-3 Black level

3.4.2 Gain

Subject	• Camera picture • Gray scale
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• CN7002 pin 4 (VIDLO)
Adjustment part	• VR7001 (Gain)
Specification	• "A"=2.7 ± 0.05 Vp-p

1) Observe waveform at pin 4 of the CN7002.
2) Adjust VR7001 so that level of "A" (see Fig. 3-4-4) of a waveform becomes 2.7 ± 0.05 Vp-p.

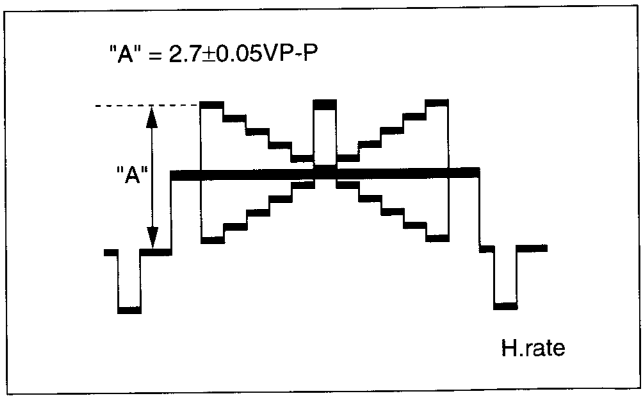

"A" = 2.7±0.05VP-P
"A"
H.rate

Fig. 3-4-4 Gain

3.5 FUSE LOCATION FOR MAIN

COMPONENT SIDE

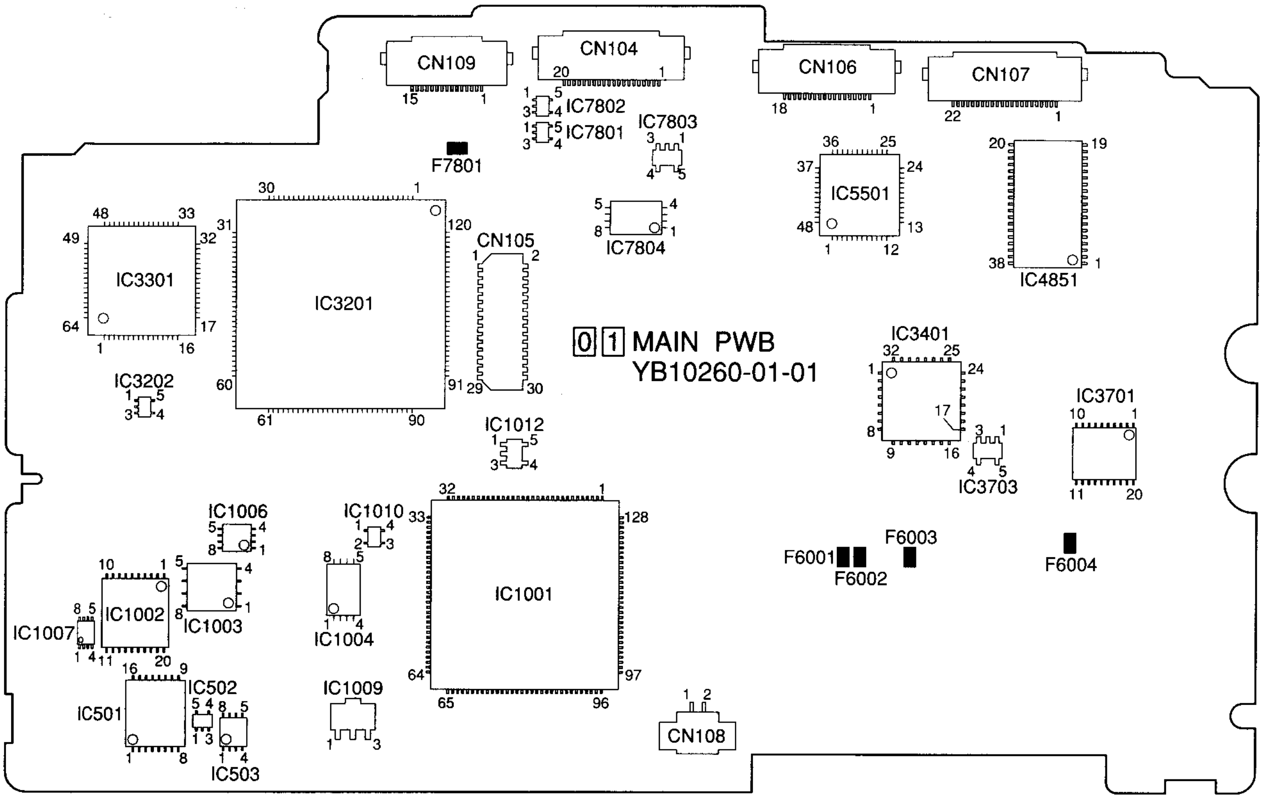

CN109
CN104
CN106
CN107
IC7802
IC7801
IC7803
F7801
IC5501
IC4851
IC7804
IC3301
IC3201
CN105
01 MAIN PWB
YB10260-01-01
IC3401
IC3202
IC3701
IC1012
IC3703
IC1006
IC1010
IC1001
F6003
F6001
F6002
F6004
IC1002
IC1003
IC1007
IC1004
IC502
IC501
IC1009
IC503
CN108

Fig. 3-5-1 FUSE location for MAIN board assembly

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

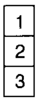
1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

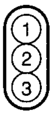
AUX : Active at high.

$\overline{\text{AUX}}$ or AUX(L) : Active at low.

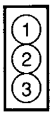
3. Interpreting Connector indications



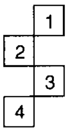
Removable connector



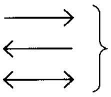
Wire soldered directly on board



Non-removable Board connector



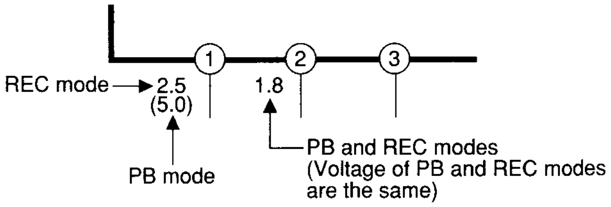
Board to Board



Connected pattern on board
The arrows indicate signal path

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Signal path Symbols

The arrows indicate the signal path as follows.

NOTE : The arrow is DVC unique object.

⇨ Playback signal path

▭▶ Playback and recording signal path

➡ Recording signal path
(including E-E signal path)

⇨▶ Capstan servo path

➡▶ Drum servo path

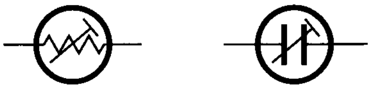
(Example)

⇨ R-Y Playback R-Y signal path

➡ Y Recording Y signal path

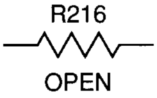
6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



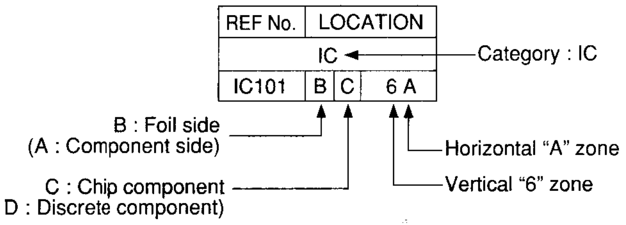
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

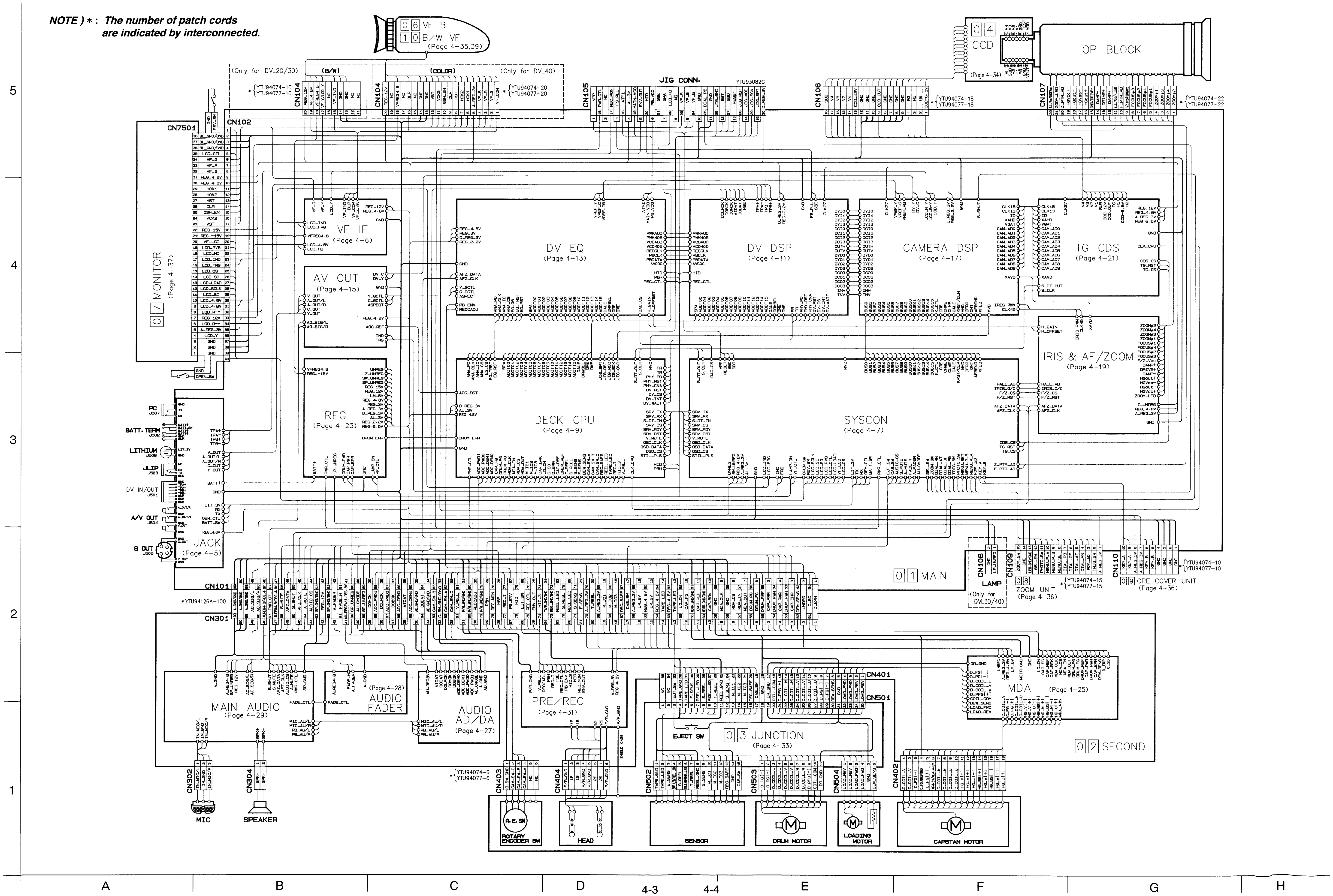
Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
C : Chip component
D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS

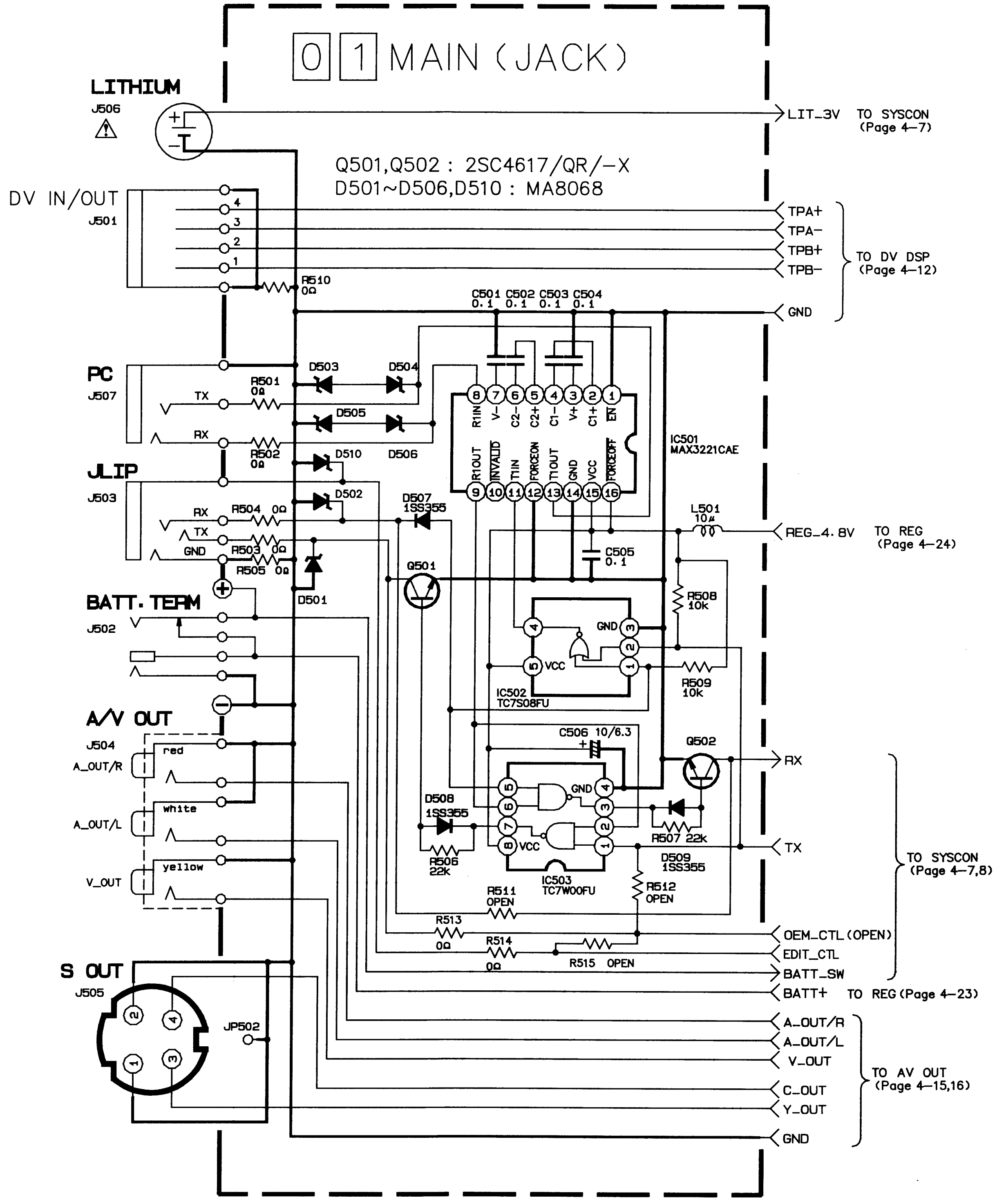
NOTE) * : The number of patch cords are indicated by interconnected.



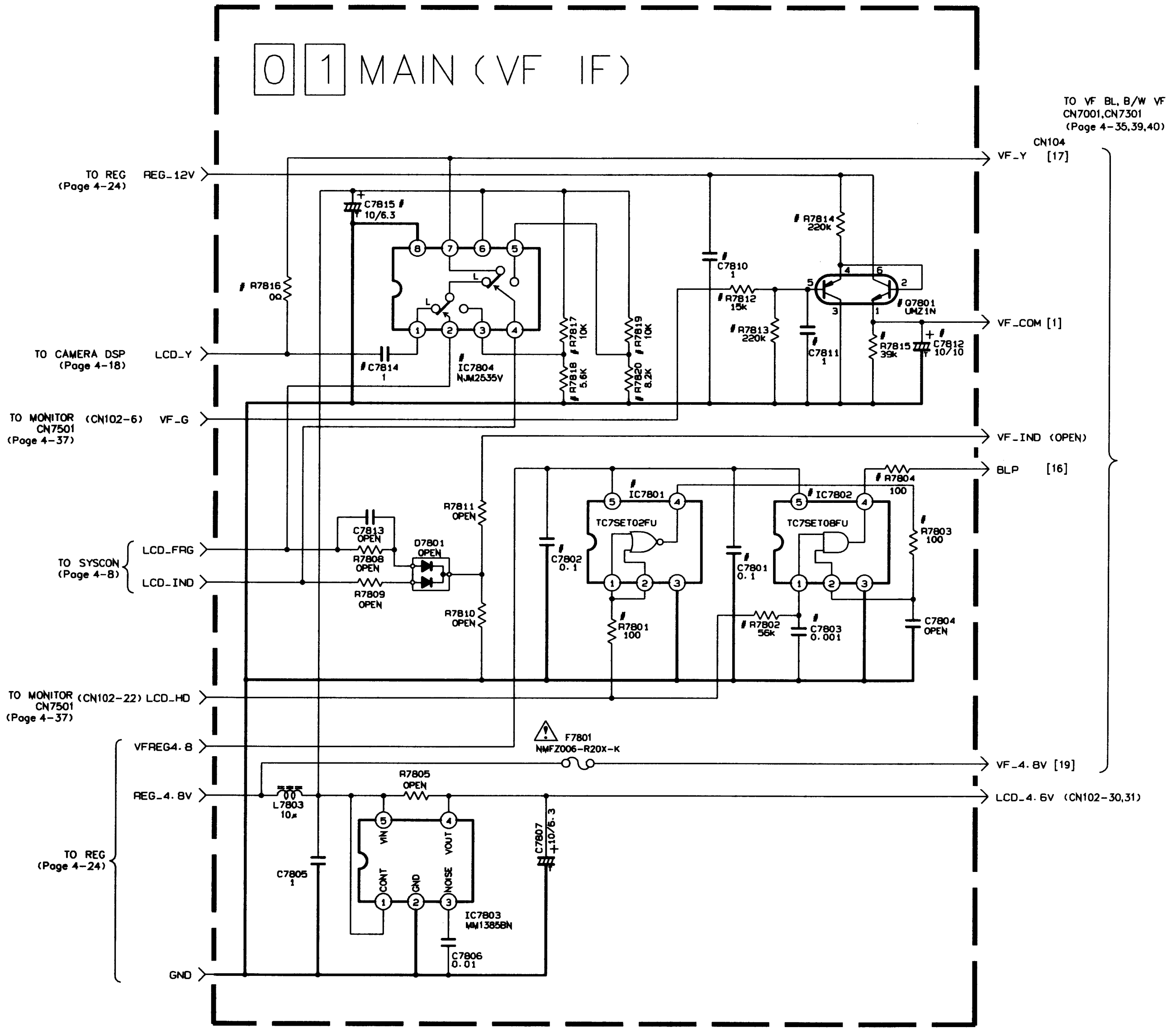
06 VF BL
10 B/W VF
(Page 4-35,39)
(Only for DVL20/30)
(B/W)
(COLOR)
(Only for DVL40)
*{YTU94074-10 {YTU94077-10
*{YTU94074-20 {YTU94077-20
CN104
CN105
JIG CONN.
YTU93082C
CN106
*{YTU94074-18 {YTU94077-18
04 CCD
(Page 4-34)
OP BLOCK
CN107
*{YTU94074-22 {YTU94077-22
CN7501
CN102
07 MONITOR (Page 4-37)
VF IF (Page 4-6)
AV OUT (Page 4-15)
REG (Page 4-23)
DV EQ (Page 4-13)
DV DSP (Page 4-11)
CAMERA DSP (Page 4-17)
TG CDS (Page 4-21)
IRIS & AF/ZOOM (Page 4-19)
DECK CPU (Page 4-9)
SYSCON (Page 4-7)
PC J507
BATT. TERM J502
LITHIUM J506
JLIP J503
DV IN/OUT J501
A/V OUT J504
S OUT J505
JACK (Page 4-5)
CN101
*YTU94126A-100
CN301
01 MAIN
CN108
LAMP
(Only for DVL30/40)
CN109
08 ZOOM UNIT (Page 4-36)
*{YTU94074-15 {YTU94077-15
CN110
09 OPE. COVER UNIT (Page 4-36)
*{YTU94074-10 {YTU94077-10
MAIN AUDIO (Page 4-29)
AUDIO FADER (Page 4-28)
AUDIO AD/DA (Page 4-27)
PRE/REC (Page 4-31)
CN401
CN501
MDA (Page 4-25)
EJECT SW
03 JUNCTION (Page 4-33)
02 SECOND
CN302
MIC
CN304
SPEAKER
*{YTU94074-6 {YTU94077-6
CN403
R.E.SW
ROTARY ENCODER SW
CN404
HEAD
CN502
SENSOR
CN503
DRUM MOTOR
CN504
LOADING MOTOR
CN402
CAPSTAN MOTOR
1
2
3
4
5
A
B
C
D
E
F
G
H

4.2 JACK AND VF IF SCHEMATIC DIAGRAMS

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



0 1 MAIN (JACK)
Q501,Q502 : 2SC4617/QR/-X
D501~D506,D510 : MA8068
LITHIUM
J506
LIT_3V TO SYSCON (Page 4-7)
DV IN/OUT
J501
TPA+
TPA-
TPB+
TPB-
TO DV DSP (Page 4-12)
GND
R510 0Ω
C501 C502 C503 C504 0.1 0.1 0.1 0.1
PC
J507
TX
RX
R501 0Ω
R502 0Ω
D503
D504
D505
D510
D506
D502
JLIP
J503
R504 0Ω
R503 0Ω
R505 0Ω
D501
GND
IC501 MAX3221CAE
R1IN
V-
C2-
C2+
C1-
V+
C1+
EN
R1OUT
INVALID
T1IN
FORCEON
T1OUT
GND
VCC
FORCEOFF
D507 1SS355
L501 10μ
REG_4.8V TO REG (Page 4-24)
C505 0.1
Q501
R508 10K
BATT. TERM
J502
IC502 TC7S08FU
R509 10K
A/V OUT
J504
A_OUT/R
red
A_OUT/L
white
V_OUT
yellow
C506 10/6.3
Q502
RX
D508 1SS355
R506 22K
R507 22K
D509 1SS355
IC503 TC7W00FU
R511 OPEN
R512 OPEN
TX
TO SYSCON (Page 4-7,8)
R513
R514 0Ω
R515 OPEN
OEM_CTL (OPEN)
EDIT_CTL
BATT_SW
BATT+ TO REG (Page 4-23)
S OUT
J505
JP502
A_OUT/R
A_OUT/L
V_OUT
C_OUT
Y_OUT
GND
TO AV OUT (Page 4-15,16)



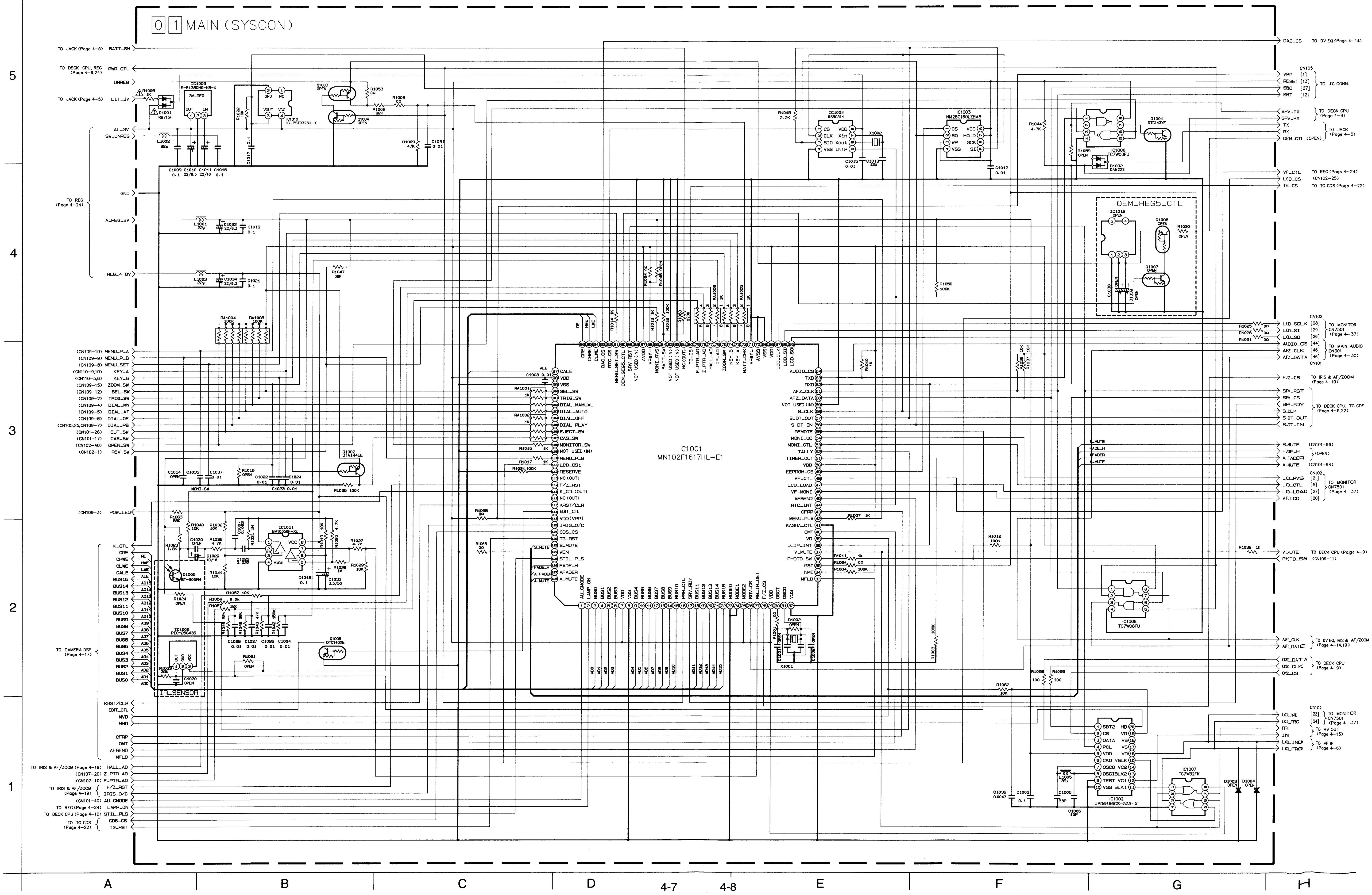
0 1 MAIN (VF IF)
TO VF BL, B/W VF CN7001,CN7301 (Page 4-35,39,40)
CN104
TO REG (Page 4-24) REG_12V
VF_Y [17]
C7815 # 10/6.3
R7816 0Ω
IC7804 NJM2535V
C7814 1
R7817 10K
R7818 5.6K
R7819 10K
R7820 8.2K
C7810 1
R7812 15K
R7813 220K
R7814 220K
C7811 1
Q7801 UMZ1N
R7815 39K
C7812 10/10
TO CAMERA DSP (Page 4-18) LCD_Y
VF_COM [1]
TO MONITOR (CN102-6) CN7501 (Page 4-37) VF_G
VF_IND (OPEN)
BLP [16]
IC7801 TC7SET02FU
IC7802 TC7SET08FU
R7804 100
R7803 100
R7811 OPEN
C7813 OPEN
R7808 OPEN
R7809 OPEN
D7801 OPEN
R7810 OPEN
TO SYSCON (Page 4-8) LCD_FRG LCD_IND
C7802 0.1
C7801 0.1
R7801 100
R7802 56K
C7803 0.001
C7804 OPEN
TO MONITOR (CN102-22) CN7501 (Page 4-37) LCD_HD
F7801 NMFZ006-R20X-K
VFREG4.8
VF_4.8V [19]
REG_4.8V
R7805 OPEN
LCD_4.6V (CN102-30,31)
L7803 10μ
C7805 1
C7807 10/6.3
IC7803 NJM1385BN
VIN VOUT CONT GND NOISE
C7806 0.01
TO REG (Page 4-24)
GND

NOTE : COMPARISON CHART OF MODELS & MARKS (#)

REF. NO / MODELS	IC7801 IC7802	IC7804	Q7801	R7801 ≀ R7804	R7812 ≀ R7816	R7817 ≀ R7820	C7801 ≀ C7803	C7810 ≀ C7812	C7814 C7815	CN104
GR-DVL20/DVL30	OPEN	USED	OPEN	OPEN	OPEN	USED	OPEN	OPEN	USED	10pin
GR-DVL40	USED	OPEN	USED	USED	USED	OPEN	USED	USED	OPEN	20pin

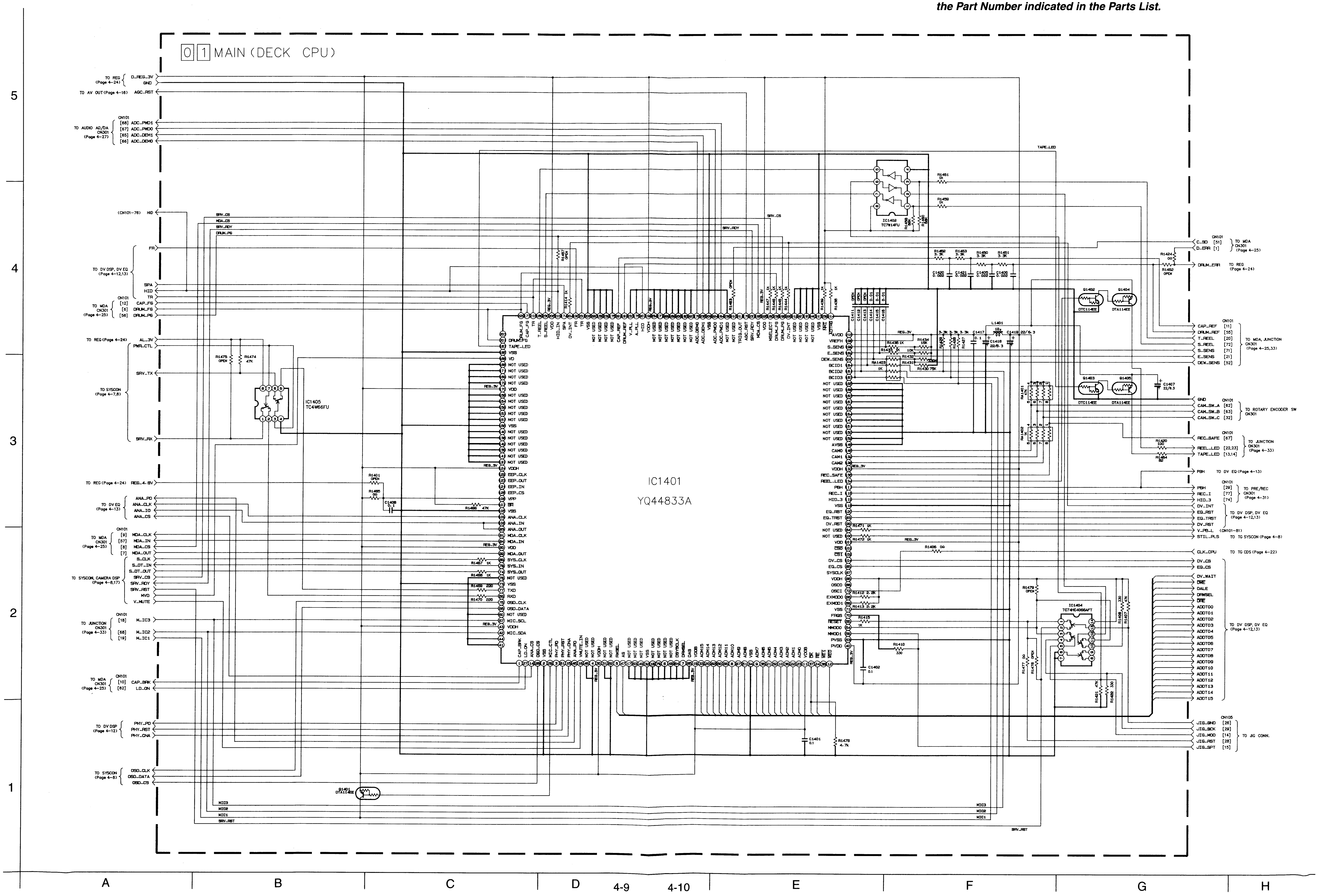
4.3 SYSCON SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


01 MAIN (SYSCON)
IC1001
MN102F1617HL-E1
IC1002
UPD6466GS-535-X
IC1003
NM25C160LZEM8
IC1004
RS5C314
IC1005
PIC-26043S
IC1006
TC7W00FU
IC1007
TC7W32FK
IC1008
TC7W08FU
IC1009
S-81330HG-KB-X
IC1010
IC-PST9323U-X
IC1011
BA10358F-XE
OEM_REG5_CTL
IR_SENSOR
TO JACK (Page 4-5) BATT_SW
TO DECK CPU, REC (Page 4-9,24) PWR_CTL
UNREG
TO JACK (Page 4-5) LIT_3V
AL_3V
SW_UNREG
TO REG (Page 4-24)
GND
A_REG_3V
REG_4.8V
(CN109-10) MENU_P_A
(CN109-9) MENU_P_B
(CN109-8) MENU_SET
(CN110-9,10) KEY_A
(CN110-5,6) KEY_B
(CN109-15) ZOOM_SW
(CN109-12) SEL_SW
(CN109-2) TRIG_SW
(CN109-4) DIAL_MN
(CN109-5) DIAL_AT
(CN109-6) DIAL_OF
(CN105,25,CN109-7) DIAL_PB
(CN101-26) EJT_SW
(CN101-17) CAS_SW
(CN102-40) OPEN_SW
(CN102-1) REV_SW
(CN109-3) POW_LED
TO CAMERA DSP (Page 4-17)
K_CTL
CRE
CHWE
CLWE
CALE
BUS15
BUS14
BUS13
BUS12
BUS11
BUS10
BUS9
BUS8
BUS7
BUS6
BUS5
BUS4
BUS3
BUS2
BUS1
BUS0
KRST/CLR
EDIT_CTL
MVD
MHD
CFRP
OMT
AFBEND
MFLD
TO IRIS & AF/ZOOM (Page 4-19) HALL_AD
(CN107-20) Z_PTR_AD
(CN107-10) F_PTR_AD
TO IRIS & AF/ZOOM (Page 4-19) F/Z_RST
IRIS_O/C
(CN101-40) AU_CMODE
TO REG (Page 4-24) LAMP_ON
TO DECK CPU (Page 4-10) STIL_PLS
TO TG CDS (Page 4-22) CDS_CS
TG_RST
DAC_CS TO DV EQ (Page 4-14)
CN105
VPP [1]
RESET [13]
SBD [27]
SBT [12]
TO JIG CONN.
SRV_TX
SRV_RX
TO DECK CPU (Page 4-9)
TX
RX
TO JACK (Page 4-5)
OEM_CTL (OPEN)
VF_CTL
LCD_CS
TG_CS
TO REG (Page 4-24)
(CN102-25)
TO TG CDS (Page 4-22)
CN102
LCD_SCLK [28]
LCD_SI [29]
LCD_SO [26]
TO MONITOR CN7501 (Page 4-37)
AUDIO_CS [44]
AFZ_CLK [45]
AFZ_DATA [46]
CN101
TO MAIN AUDIO CN301 (Page 4-30)
F/Z_CS
TO IRIS & AF/ZOOM (Page 4-19)
SRV_RST
SRV_CS
SRV_RDY
S_CLK
S_DT_OUT
S_DT_IN
TO DECK CPU, TG CDS (Page 4-9,22)
S_MUTE (CN101-96)
FADE_H
A_FADER
(OPEN)
A_MUTE (CN101-94)
LCD_RVS [21]
LCD_CTL [5]
LCD_LOAD [27]
VF_LCD [20]
TO MONITOR CN7501 (Page 4-37)
V_MUTE TO DECK CPU (Page 4-9)
PHOTO_SW (CN109-11)
AF_CLK
AF_DATE
TO DV EQ, IRIS & AF/ZOOM (Page 4-14,19)
OSL_DATA
OSL_CLK
OSL_CS
TO DECK CPU (Page 4-9)
LCD_IND [23]
LCD_FRG [24]
TO MONITOR CN7501 (Page 4-37)
FR
IN
TO AV OUT (Page 4-15)
LC_IND
LC_FRG
TO VF IF (Page 4-6)
X1001
X1002
Q1001 DTC143XE
Q1002 DTA144EE
Q1003 OPEN
Q1004 OPEN
Q1005 ST-305R4
Q1006 OPEN
Q1007 OPEN
Q1008 DTC143XE
D1001 RB715F
D1002 DAN222
D1003 OPEN
D1004 OPEN
1
2
3
4
5
A
B
C
D
E
F
G
H

4.4 DECK CPU SCHEMATIC DIAGRAM

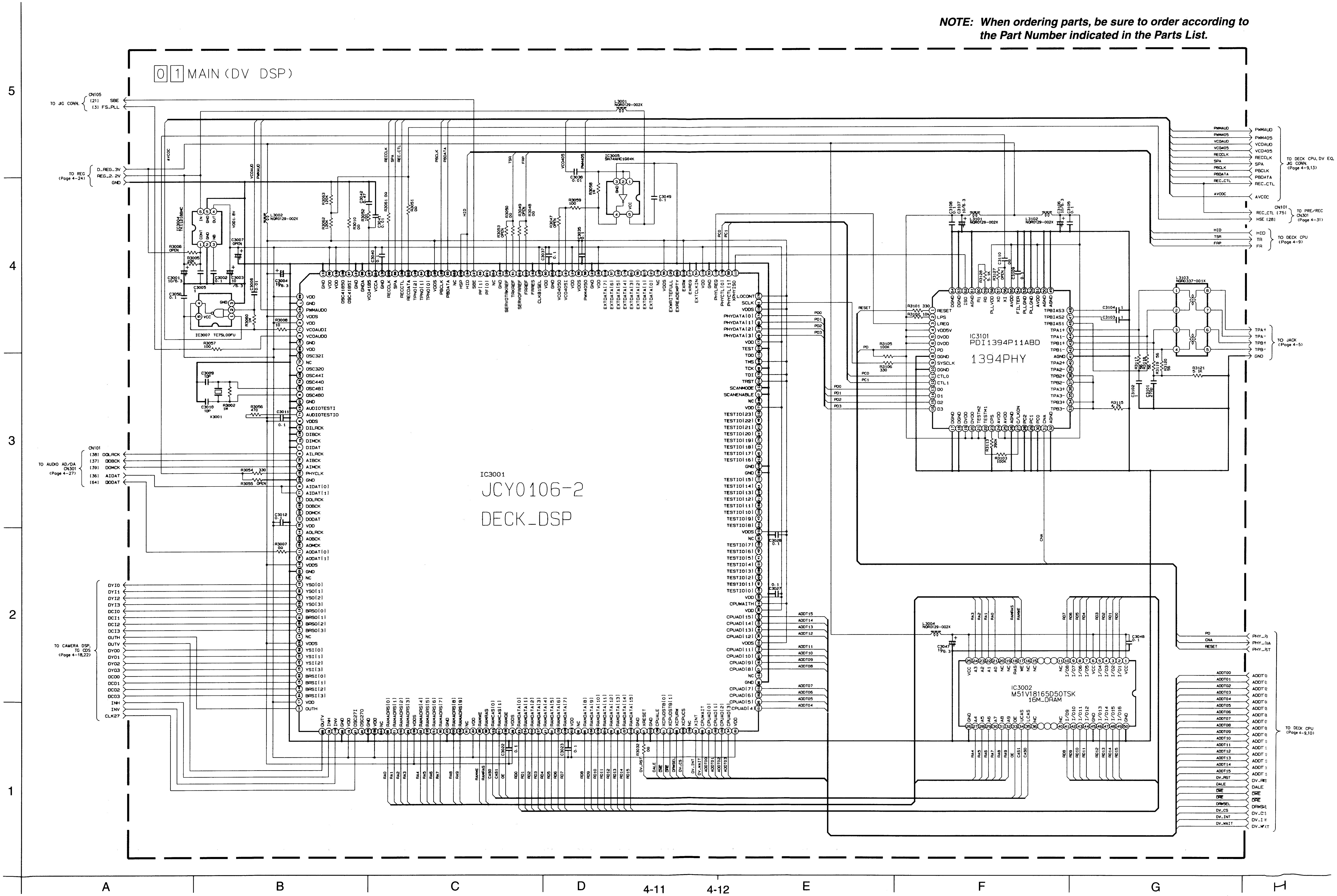
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



01 MAIN (DECK CPU)
IC1401
YQ44833A
IC1402
TC7S14FU
IC1405
TC4W66FU
IC1404
TC74HC4066AFT
Q1401
DTA114EE
Q1402
DTC114EE
Q1403
DTC114EE
Q1404
DTA114EE
Q1405
DTA114EE
L1401
TO REG (Page 4-24)
D_REG_3V
GND
TO AV OUT (Page 4-16)
AGC_RST
TO AUDIO AD/DA CN301 (Page 4-27)
CN101
[68] ADC_PWD1
[67] ADC_PWD0
[65] ADC_DEM1
[66] ADC_DEM0
(CN101-78) HID
TO DV DSP, DV EQ (Page 4-12,13)
FR
SPA
HID
TO MDA CN301 (Page 4-25)
[12] CAP_FG
[6] DRUM_FG
[56] DRUM_PG
TR
TO REG (Page 4-24)
AL_3V
PWR_CTL
TO SYSCON (Page 4-7,8)
SRV_TX
SRV_RX
TO REG (Page 4-24) REG_4.8V
TO DV EQ (Page 4-13)
ANA_PD
ANA_CLK
ANA_IO
ANA_CS
TO MDA CN301 (Page 4-25)
[9] MDA_CLK
[57] MDA_IN
[8] MDA_CS
[7] MDA_OUT
TO SYSCON, CAMERA DSP (Page 4-8,17)
S_CLK
S_DT_IN
S_DT_OUT
SRV_CS
SRV_RDY
SRV_RST
MVD
V_MUTE
TO JUNCTION CN301 (Page 4-33)
[18] M_IC3
[68] M_IC2
[19] M_IC1
TO MDA CN301 (Page 4-25)
[10] CAP_BRK
[62] LD_ON
TO DV DSP (Page 4-12)
PHY_PD
PHY_RST
PHY_CNA
TO SYSCON (Page 4-8)
OSD_CLK
OSD_DATA
OSD_CS
MIC3
MIC2
MIC1
SRV_RST
TAPE_LED
SRV_CS
MDA_CS
SRV_RDY
DRUM_PG
REG_3V
CN101
C_SD [51]
D_ERR [1]
TO MDA CN301 (Page 4-25)
DRUM_ERR
TO REG (Page 4-24)
CAP_REF [11]
DRUM_REF [55]
T_REEL [20]
S_REEL [72]
S_SENS [71]
E_SENS [21]
DEW_SENS [52]
TO MDA, JUNCTION CN301 (Page 4-25,33)
GND
CAM_SW_A [62]
CAM_SW_B [63]
CAM_SW_C [32]
TO ROTARY ENCODER SW CN301
REC_SAFE [67]
REEL_LED [22,23]
TAPE_LED [13,14]
TO JUNCTION CN301 (Page 4-33)
PBH
TO DV EQ (Page 4-13)
PBH [29]
REC_I [77]
HID_3 [74]
TO PRE/REC CN301 (Page 4-31)
DV_INT
EQ_RST
EQ_TRST
DV_RST
TO DV DSP, DV EQ (Page 4-12,13)
V_PB_L (CN101-81)
STIL_PLS
TO TG SYSCON (Page 4-8)
CLK_CPU
TO TG CDS (Page 4-22)
DV_CS
EQ_CS
DV_WAIT
DWE
DALE
DRWSEL
DRE
ADDT00
ADDT01
ADDT02
ADDT03
ADDT04
ADDT05
ADDT06
ADDT07
ADDT08
ADDT09
ADDT10
ADDT11
ADDT12
ADDT13
ADDT14
ADDT15
TO DV DSP, DV EQ (Page 4-12,13)
CN105
JIG_GND [26]
JIG_SCK [29]
JIG_MOD [14]
JIG_RST [28]
JIG_SPT [15]
TO JIG CONN.
IC1401 pins: DRUM_FG, TAPE_LED, VSS, VD, NOT USED, VDD, VDDH, EEP_CLK, EEP_OUT, EEP_IN, EEP_CS, VPP, BRI, ANA_CLK, ANA_IN, ANA_OUT, MDA_CLK, MDA_IN, MDA_OUT, SYS_CLK, SYS_IN, SYS_OUT, TXD, RXD, OSD_CLK, OSD_DATA, MIC_SCL, MIC_SDA
AVDD, VREFH, S_SENS, E_SENS, DEW_SENS, BCID1, BCID2, BCID3, AVSS, CAM0, CAM1, CAM2, REC_SAFE, REEL_LED, PBH, REC_I, HID_3, EQ_RST, EQ_TRST, DV_RST, CS0, CS1, DV_CS, EQ_CS, SYSCLK, OSCO, OSCI, EXMOD0, EXMOD1, FRQS, RESET, NMOD0, NMOD1, PVSS, PVDD
R1401 OPEN, R1405, C1408 0.1, R1466 47K, R1467 1K, R1468 1K, R1469 220, R1470 220, R1475 OPEN, R1474 47K, R1461 1K, R1459 1K, R1462 3.3K, R1453 3.3K, R1450 3.3K, R1451 3.3K, C1420 0.022, C1421 0.022, C1405 0.022, C1406 0.022, R1424 0Ω, R1452 OPEN, R1434 15K, R1435 1K, R1433 1K, R1432 10K, R1403 1K, R1431, R1430 75K, C1417 0.1, C1418 22/6.3, C1419 22/6.3, C1407 22/6.3, R1420 100, R1464 82, R1471 1K, R1472 1K, R1406 0Ω, R1412 2.2K, R1413 2.2K, R1415 1K, R1410 330, C1402 0.1, C1401 0.1, R1476 4.7K, R1479 OPEN, R1477 0Ω, R1478 OPEN, R1421 47K, R1482 330, R1468 330, R1467 47K
A B C D E F G H
1 2 3 4 5

4.5 DV DSP SCHEMATIC DIAGRAM

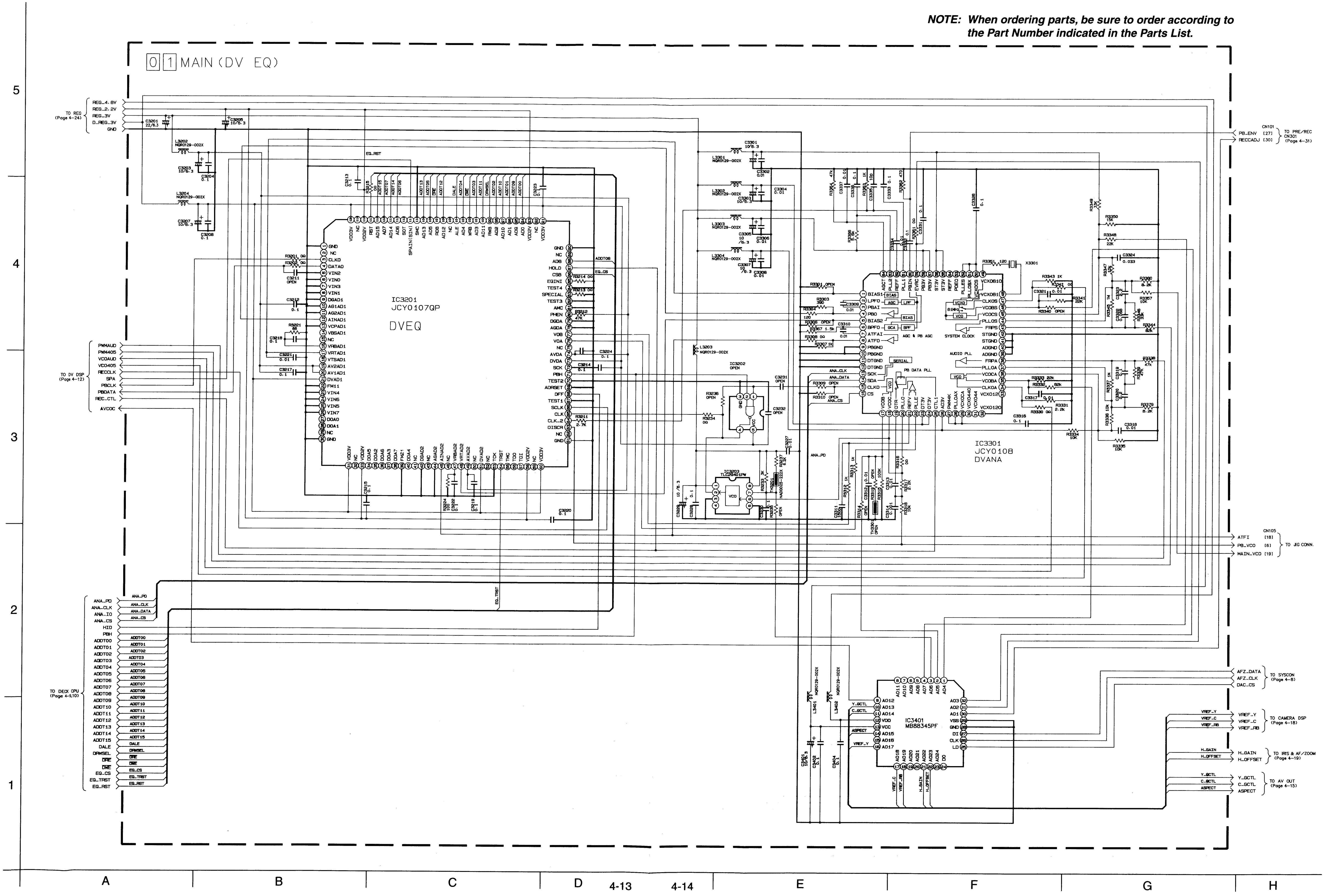
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



0 1 MAIN (DV DSP)
TO JIG CONN.
CN105
(21) SBE
(3) FS_PLL
TO REG
(Page 4-24)
D_REG_3V
REG_2.2V
GND
TO AUDIO AD/DA
CN301
(Page 4-27)
CN101
(38) DOLRCK
(37) DOBCK
(39) DOMCK
(36) AIDAT
(64) DODAT
TO CAMERA DSP, TG CDS
(Page 4-18,22)
DYI0
DYI1
DYI2
DYI3
DCI0
DCI1
DCI2
DCI3
OUTH
OUTV
DYO0
DYO1
DYO2
DYO3
DCO0
DCO1
DCO2
DCO3
INH
INV
CLK27
IC3001
JCY0106-2
DECK_DSP
IC3007 TC7SL00FU
IC3004
IC3005
SN74AHC1G04K
X3001
L3001
NQR0129-002X
L3002
NQR0129-002X
IC3101
PDI1394P11ABD
1394PHY
L3101
NQR0129-002X
L3102
NQR0129-002X
L3103
NQR0337-001X
IC3002
M51V18165D50TSK
16M_DRAM
L3004
NQR0129-002X
PWMAUD
PWM405
VCOAUD
VCO405
RECCLK
SPA
PBCLK
PBDATA
REC_CTL
AVCOC
TO DECK CPU, DV EQ, JIG CONN.
(Page 4-9,13)
CN101
REC_CTL (75)
HSE (28)
TO PRE/REC
CN301
(Page 4-31)
HID
TSR
FRP
HID
TR
FR
TO DECK CPU
(Page 4-9)
TPA+
TPA-
TPB+
TPB-
GND
TO JACK
(Page 4-5)
PD
CNA
RESET
PHY_PD
PHY_CNA
PHY_RST
ADDT00
ADDT01
ADDT02
ADDT03
ADDT04
ADDT05
ADDT06
ADDT07
ADDT08
ADDT09
ADDT10
ADDT11
ADDT12
ADDT13
ADDT14
ADDT15
DV_RST
DALE
DWE
DRE
DRWSEL
DV_CS
DV_INT
DV_WAIT
TO DECK CPU
(Page 4-9,10)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.6 DV EQ SCHEMATIC DIAGRAM

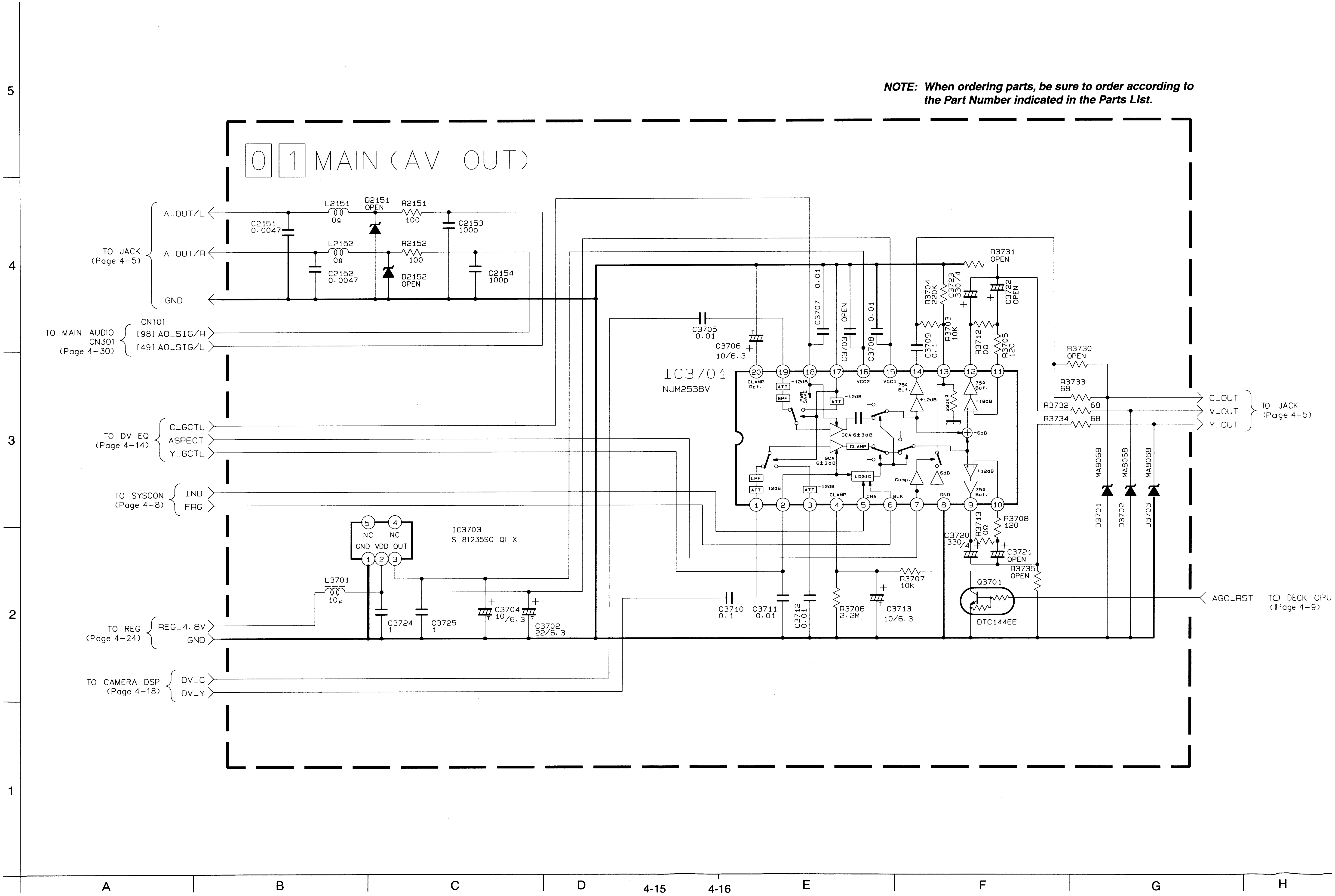
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



01 MAIN (DV EQ)
TO REG (Page 4-24)
REG_4.8V
REG_2.2V
REG_3V
D_REG_3V
GND
TO DV DSP (Page 4-12)
PWMAUD
PWM405
VCOAUD
VCO405
RECCLK
SPA
PBCLK
PBDATA
REC_CTL
AVCOC
TO DECK CPU (Page 4-9,10)
ANA_PD
ANA_CLK
ANA_IO
ANA_CS
HID
PBH
ADDT00
ADDT01
ADDT02
ADDT03
ADDT04
ADDT05
ADDT06
ADDT07
ADDT08
ADDT09
ADDT10
ADDT11
ADDT12
ADDT13
ADDT14
ADDT15
DALE
DRWSEL
DRE
DWE
EQ_CS
EQ_TRST
EQ_RST
IC3201
JCY0107QP
DVEQ
IC3301
JCY0108
DVANA
IC3401
MB88345PF
IC3202
IC3203
TLC2941PW
X3301
L3202 NQR0129-002X
L3204 NQR0129-002X
L3301 NQR0129-002X
L3302 NQR0129-002X
L3303 NQR0129-002X
L3304 NQR0129-002X
L3203 NQR0129-002X
L3401 NQR0129-002X
L3402 NQR0129-002X
CN101
PB_ENV [27]
RECCADJ [30]
TO PRE/REC CN301 (Page 4-31)
CN105
ATFI [18]
PB_VCO [6]
MAIN_VCO [19]
TO JIG CONN.
AFZ_DATA
AFZ_CLK
DAC_CS
TO SYSCON (Page 4-8)
VREF_Y
VREF_C
VREF_RB
TO CAMERA DSP (Page 4-18)
H_GAIN
H_OFFSET
TO IRIS & AF/ZOOM (Page 4-19)
Y_GCTL
C_GCTL
ASPECT
TO AV OUT (Page 4-15)
1
2
3
4
5
A
B
C
D
E
F
G
H

4.7 AV OUT SCHEMATIC DIAGRAM

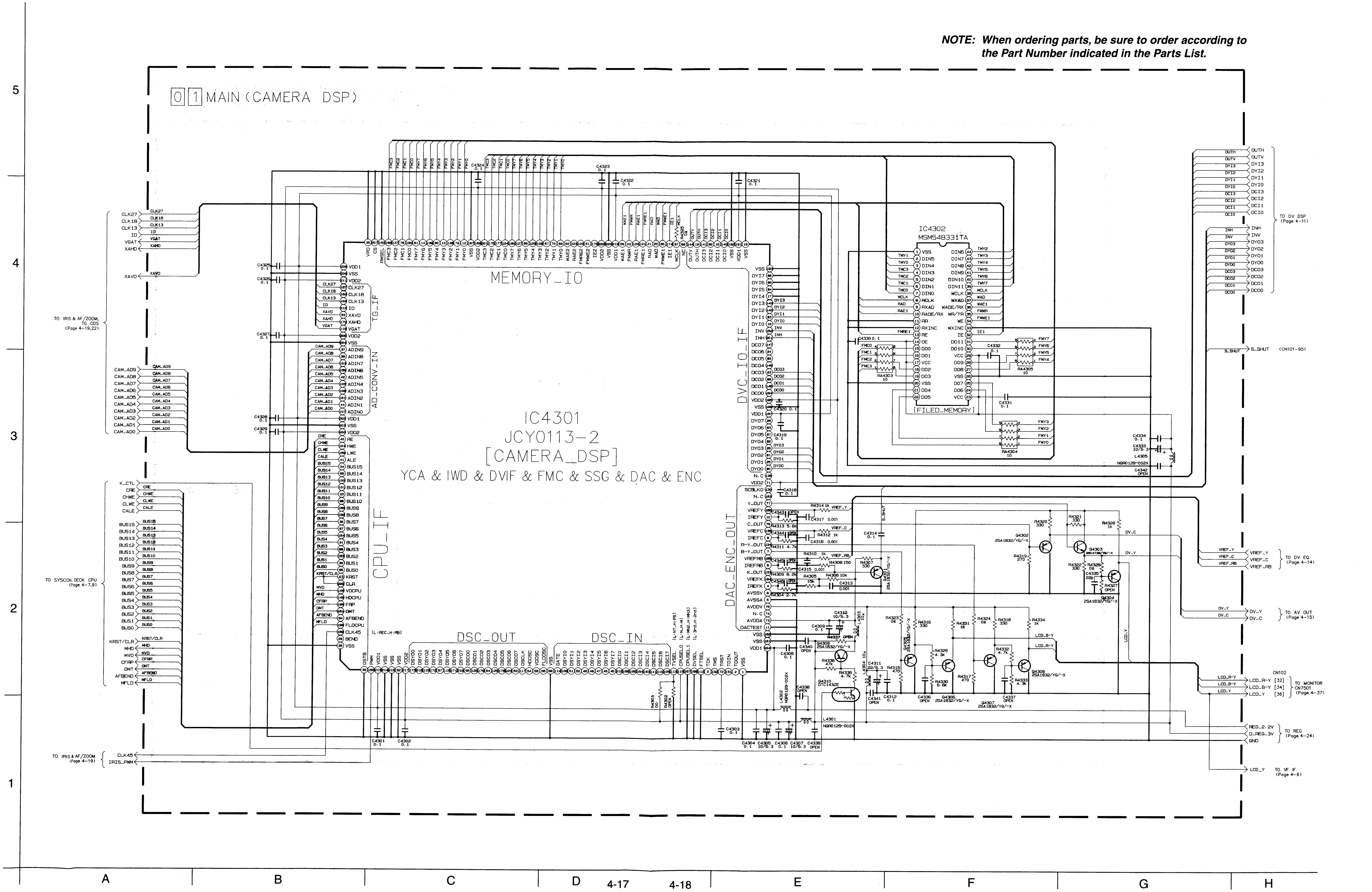
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



0 1 MAIN (AV OUT)
TO JACK (Page 4-5)
A_OUT/L
A_OUT/R
GND
C2151 0.0047
L2151 0Ω
D2151 OPEN
R2151 100
C2153 100p
L2152 0Ω
R2152 100
C2152 0.0047
D2152 OPEN
C2154 100p
TO MAIN AUDIO CN301 (Page 4-30)
CN101
[98] AO_SIG/R
[49] AO_SIG/L
C3705 0.01
C3706 10/6.3
C3707 0.01
C3703 OPEN
C3708 0.01
R3704 220K
C3723 330/4
C3722 OPEN
R3731 OPEN
C3709 0.1
R3703 10K
R3712 0Ω
R3705 120
IC3701
NJM2538V
CLAMP Ref.
ATT
BPF
PWR SAVE
-12dB
VCC2
VCC1
75Ω Buf.
+12dB
220kΩ
+18dB
-6dB
GCA 6±3dB
CLAMP
GCA 6±3dB
LOGIC
LPF
ATT
-12dB
CHA
BLK
Comp.
6dB
GND
R3730 OPEN
R3733 68
R3732 68
R3734 68
C_OUT
V_OUT
Y_OUT
TO JACK (Page 4-5)
MA8068
D3701
D3702
D3703
TO DV EQ (Page 4-14)
C_GCTL
ASPECT
Y_GCTL
TO SYSCON (Page 4-8)
IND
FRG
IC3703
S-81235SG-QI-X
NC
NC
GND VDD OUT
R3708 120
R3713 0Ω
C3720 330/4
C3721 OPEN
R3735 OPEN
Q3701
DTC144EE
R3707 10k
AGC_RST
TO DECK CPU (Page 4-9)
L3701 10μ
C3724 1
C3725 1
C3704 10/6.3
C3702 22/6.3
C3710 0.1
C3711 0.01
C3712 0.01
R3706 2.2M
C3713 10/6.3
TO REG (Page 4-24)
REG_4.8V
GND
TO CAMERA DSP (Page 4-18)
DV_C
DV_Y
5
4
3
2
1
A
B
C
D
E
F
G
H

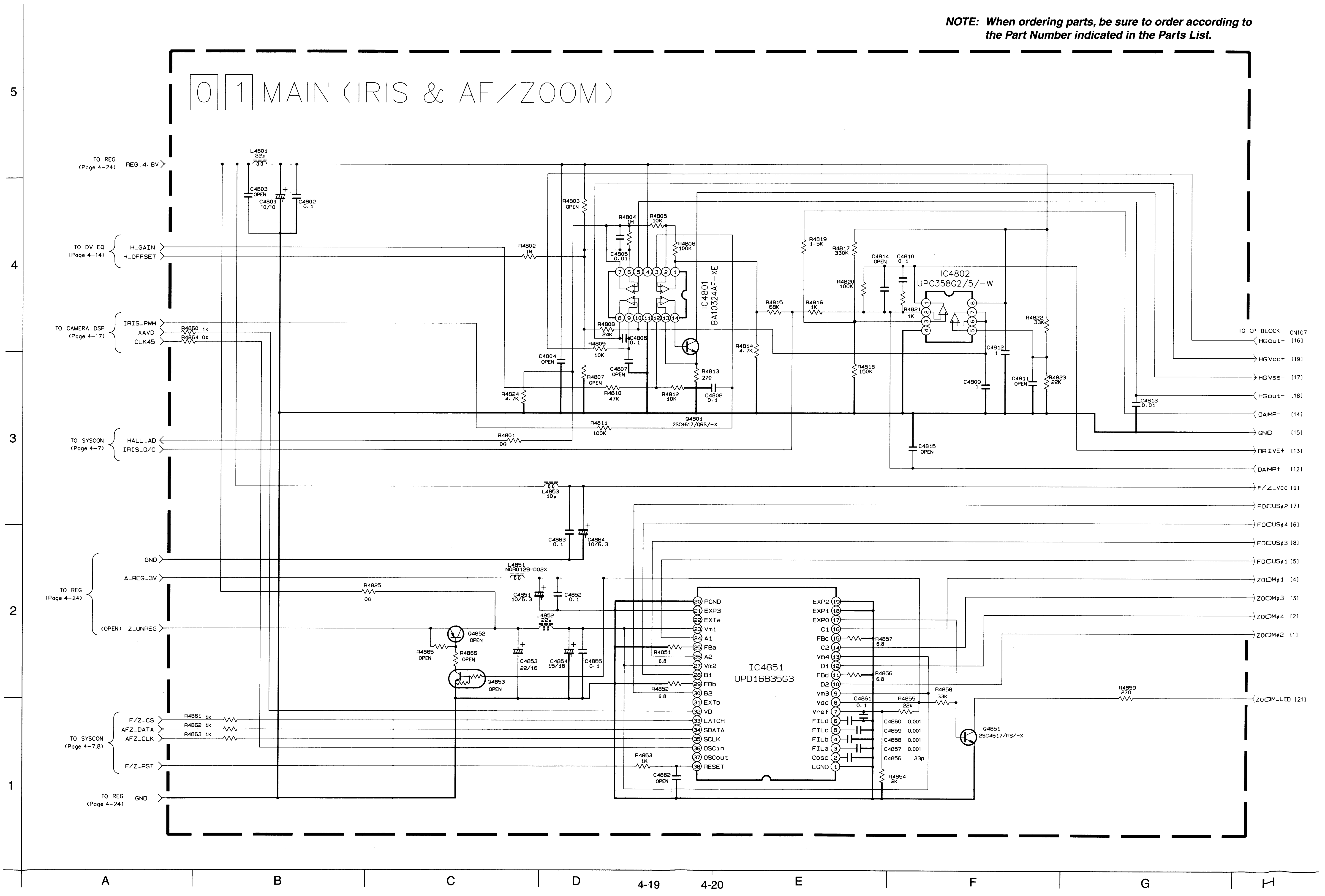
4.8 CAMERA DSP SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


01 MAIN (CAMERA DSP)
IC4301
JCY0113-2
[CAMERA_DSP]
YCA & IWD & DVIF & FMC & SSG & DAC & ENC
MEMORY_IO
TG_IF
AD_CONV_IN
CPU_IF
DSC_OUT
DSC_IN
DVC_IO_IF
DAC_ENC_OUT
IC4302
MSM54B331TA
[FILED_MEMORY]
TO IRIS & AF/ZOOM, TG CDS (Page 4-19,22)
TO SYSCON,DECK CPU (Page 4-7,9)
TO IRIS & AF/ZOOM (Page 4-19)
TO DV DSP (Page 4-11)
(CN101-95)
TO DV EQ (Page 4-14)
TO AV OUT (Page 4-15)
CN102
TO MONITOR CN7501 (Page 4-37)
TO REC (Page 4-24)
TO VF IF (Page 4-6)
CLK27
CLK18
CLK13
ID
VGAT
XAHD
XAVD
CAM_AD9
CAM_AD0
K_CTL
CRE
CHWE
CLWE
CALE
BUS15
BUS0
KRST/CLR
MHD
MVD
CFRP
OMT
AFBEND
MFLD
CLK45
IRIS_PWM
OUTH
OUTV
DYI3
DCI0
INH
INV
DYO3
DCO0
S_SHUT
VREF_Y
VREF_C
VREF_RB
DV_Y
DV_C
LCD_R-Y
LCD_B-Y
LCD_Y
REG_2.2V
D_REG_3V
GND
L4301
NQR0129-002X
L4305
Q4302 2SA1832/YG/-X
Q4303 2SC4738/YG/-X
Q4304 2SA1832/YG/-X
Q4306 2SA1832/YG/-X
Q4307 2SA1832/YG/-X
Q4308 2SA1832/YG/-X
Q4309 2SA1832/YG/-X
Q4310 DTC143ZE
A
B
C
D
E
F
G
H
1
2
3
4
5

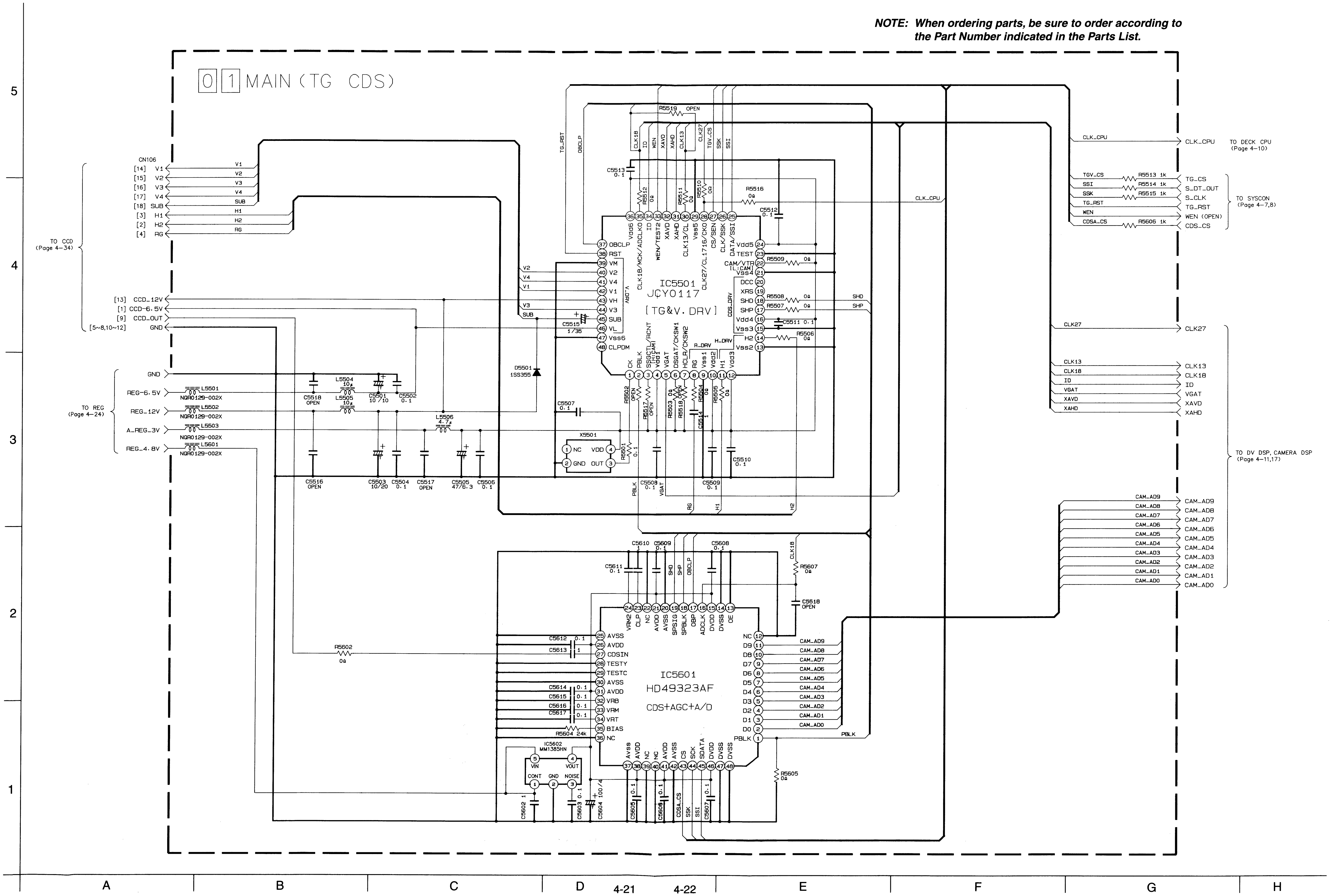
4.9 IRIS & AF/ZOOM SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


01 MAIN (IRIS & AF/ZOOM)
TO REG (Page 4-24) REG_4.8V
TO DV EQ (Page 4-14) H_GAIN H_OFFSET
TO CAMERA DSP (Page 4-17) IRIS_PWM XAVD CLK45
TO SYSCON (Page 4-7) HALL_AD IRIS_O/C
GND
TO REG (Page 4-24) A_REG_3V (OPEN) Z_UNREG
TO SYSCON (Page 4-7,8) F/Z_CS AFZ_DATA AFZ_CLK F/Z_RST
TO REG (Page 4-24) GND
L4801 22µ
C4803 OPEN
C4801 10/10
C4802 0.1
R4802 1M
R4860 1k
R4864 0Ω
R4803 OPEN
R4804 1M
R4805 10K
R4806 100K
C4805 0.01
IC4801 BA10324AF-XE
R4808 24K
C4806 0.1
R4809 10K
C4804 OPEN
C4807 OPEN
R4807 OPEN
R4810 47K
R4812 10K
R4813 270
C4808 0.1
Q4801 2SC4617/QRS/-X
R4824 4.7K
R4811 100K
R4801 0Ω
R4815 68K
R4814 4.7K
R4816 1K
R4819 1.5K
R4817 330K
R4820 100K
C4814 OPEN
C4810 0.1
IC4802 UPC358G2/5/-W
R4821 1K
R4818 150K
C4812 1
C4809 1
C4811 OPEN
R4822 33K
R4823 22K
C4813 0.01
C4815 OPEN
TO OP BLOCK CN107
HGout+ [16]
HGVcc+ [19]
HGVss- [17]
HGout- [18]
DAMP- [14]
GND [15]
DRIVE+ [13]
DAMP+ [12]
F/Z_Vcc [9]
FOCUSφ2 [7]
FOCUSφ4 [6]
FOCUSφ3 [8]
FOCUSφ1 [5]
ZOOMφ1 [4]
ZOOMφ3 [3]
ZOOMφ4 [2]
ZOOMφ2 [1]
ZOOM_LED [21]
L4853 10µ
C4863 0.1
C4864 10/6.3
L4851 NQR0129-002X
R4825 0Ω
C4851 10/6.3
C4852 0.1
L4852 22µ
Q4852 OPEN
R4865 OPEN
R4866 OPEN
Q4853 OPEN
C4853 22/16
C4854 15/16
C4855 0.1
R4861 1k
R4862 1k
R4863 1k
IC4851 UPD16835G3
20 PGND
21 EXP3
22 EXTa
23 Vm1
24 A1
25 FBa
26 A2
27 Vm2
28 B1
29 FBb
30 B2
31 EXTb
32 VD
33 LATCH
34 SDATA
35 SCLK
36 OSCin
37 OSCout
38 RESET
19 EXP2
18 EXP1
17 EXP0
16 C1
15 FBc
14 C2
13 Vm4
12 D1
11 FBd
10 D2
9 Vm3
8 Vdd
7 Vref
6 FILd
5 FILc
4 FILb
3 FILa
2 Cosc
1 LGND
R4851 6.8
R4852 6.8
R4853 1K
C4862 OPEN
R4857 6.8
R4856 6.8
C4861 0.1
R4855 22k
R4858 33K
C4860 0.001
C4859 0.001
C4858 0.001
C4857 0.001
C4856 33p
R4854 2K
Q4851 2SC4617/RS/-X
R4859 270
1 2 3 4 5
A B C D E F G H

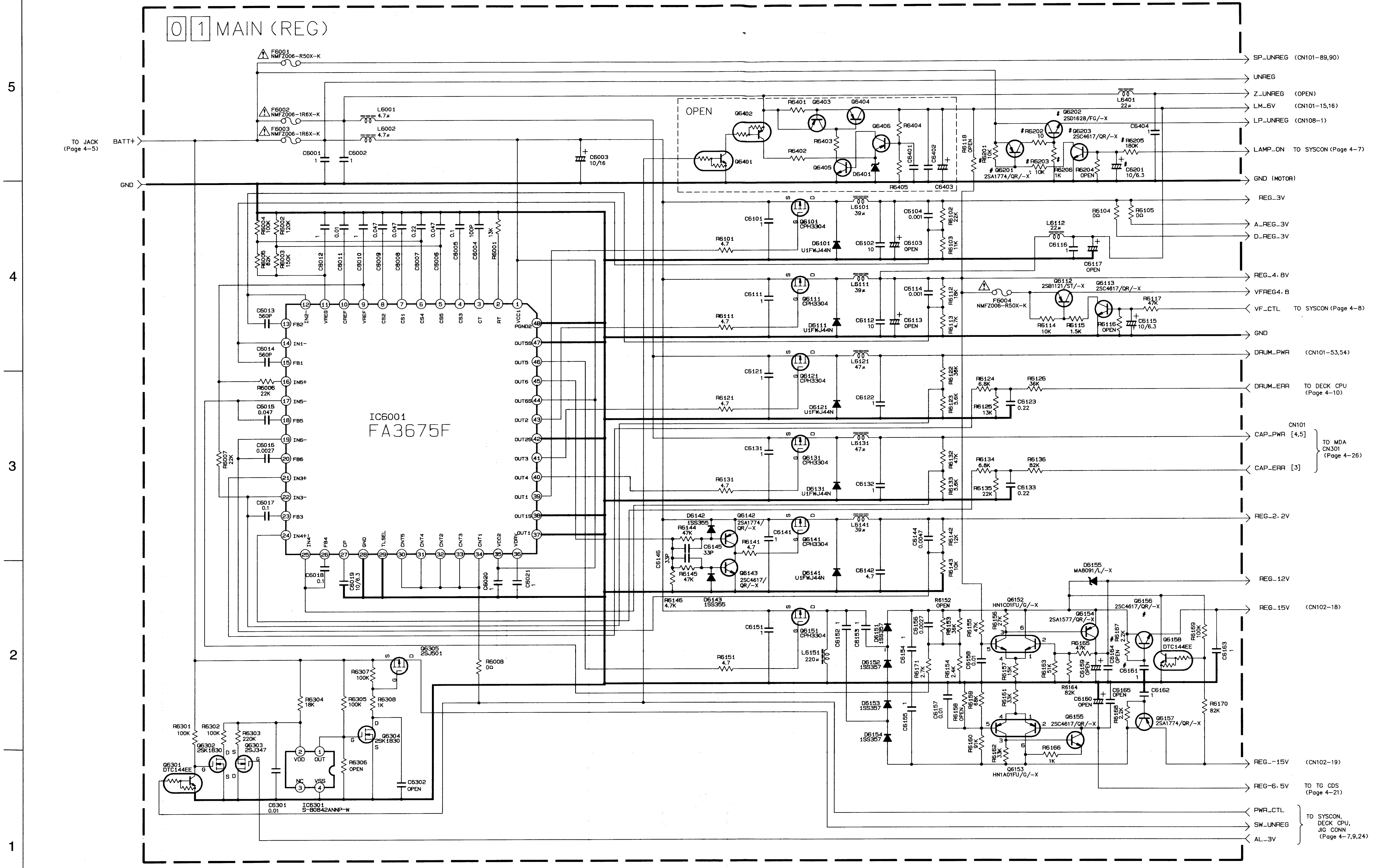
4.10 TG CDS SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


01 MAIN (TG CDS)
CN106
[14] V1
[15] V2
[16] V3
[17] V4
[18] SUB
[3] H1
[2] H2
[4] RG
TO CCD (Page 4-34)
[13] CCD_12V
[1] CCD-6.5V
[9] CCD_OUT
[5~8,10~12] GND
GND
REG-6.5V
REG_12V
A_REG_3V
REG_4.8V
TO REG (Page 4-24)
L5501 NQR0129-002X
L5502 NQR0129-002X
L5503 NQR0129-002X
L5601 NQR0129-002X
L5504 10μ
L5505 10μ
L5506 4.7μ
C5518 OPEN
C5501 10/10
C5502 0.1
C5516 OPEN
C5503 10/20
C5504 0.1
C5517 OPEN
C5505 47/6.3
C5506 0.1
D5501 1SS355
C5515 1/35
C5507 0.1
X5501
NC VDD GND OUT
C5513 0.1
R5519 OPEN
R5512 0Ω
R5511 0Ω
R5510 0Ω
R5516 0Ω
C5512 0.1
R5509 0Ω
R5508 0Ω
R5507 0Ω
C5511 0.1
R5506 0Ω
R5502 OPEN
R5517 OPEN
R5503 0Ω
R5518 OPEN
R5504 0Ω
C5514 0.1
R5505 0Ω
R5501 0Ω
C5508 0.1
C5509 0.1
C5510 0.1
IC5501 JCY0117 [TG&V.DRV]
OBCLP RST VM V2 V4 V1 VH V3 SUB VL Vss6 CLPDM
CLK18/MCK/ADCLKO ID WEN/TEST2 XAVD XAHD CLK13/CL Vss5 CLK27/CL1716/CKO CS/SEN CLK/SSK DATA/SSI
Vdd5 TEST CAM/VTR (L:CAM) Vss4 DCC XRS SHD SHP Vdd4 Vss3 H2 Vss2
CK PBLK SSGCTL/RCNT (H:CAM) Vdd1 VGAT DSGAT/CKSW1 HCLR/CKSW2 RG Vss1 Vdd2 H1 Vdd3
V_DRV CDS_DRV R_DRV H_DRV
TG_RST OBCLP CLK18 ID WEN XAVD XAHD CLK13 CLK27 TGV_CS SSK SSI
SHD SHP
PBLK VGAT RG H1 H2
CLK_CPU
CLK_CPU TO DECK CPU (Page 4-10)
TGV_CS SSI SSK TG_RST WEN CDSA_CS
R5513 1k R5514 1k R5515 1k R5606 1k
TG_CS S_DT_OUT S_CLK TG_RST WEN (OPEN) CDS_CS
TO SYSCON (Page 4-7,8)
CLK27
CLK13 CLK18 ID VGAT XAVD XAHD
TO DV DSP, CAMERA DSP (Page 4-11,17)
CAM_AD9 CAM_AD8 CAM_AD7 CAM_AD6 CAM_AD5 CAM_AD4 CAM_AD3 CAM_AD2 CAM_AD1 CAM_AD0
C5610 1
C5609 0.1
C5608 0.1
C5611 0.1
CLK18
R5607 0Ω
C5618 OPEN
SHD SHP OBCLP
IC5601 HD49323AF CDS+AGC+A/D
VRM2 CLP NC AVDD AVSS SPSIG SPBLK OBP ADCLK DVDD DVSS OE
AVSS AVDD CDSIN TESTY TESTC AVSS AVDD VRB VRM VRT BIAS NC
NC D9 D8 D7 D6 D5 D4 D3 D2 D1 D0 PBLK
AVSS AVDD NC NC AVDD AVSS CS SCK SDATA DVDD DVSS DVSS
C5612 0.1
C5613 1
C5614 0.1
C5615 0.1
C5616 0.1
C5617 0.1
R5604 24k
R5602 0Ω
R5605 0Ω
IC5602 MM1385HN
VIN VOUT CONT GND NOISE
C5602 1
C5603 0.1
C5604 100/4
C5605 0.1
C5606 0.1
CDSA_CS SSK SSI
C5607 0.1
PBLK
A B C D E F G H
1 2 3 4 5

4.11 REGULATOR SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

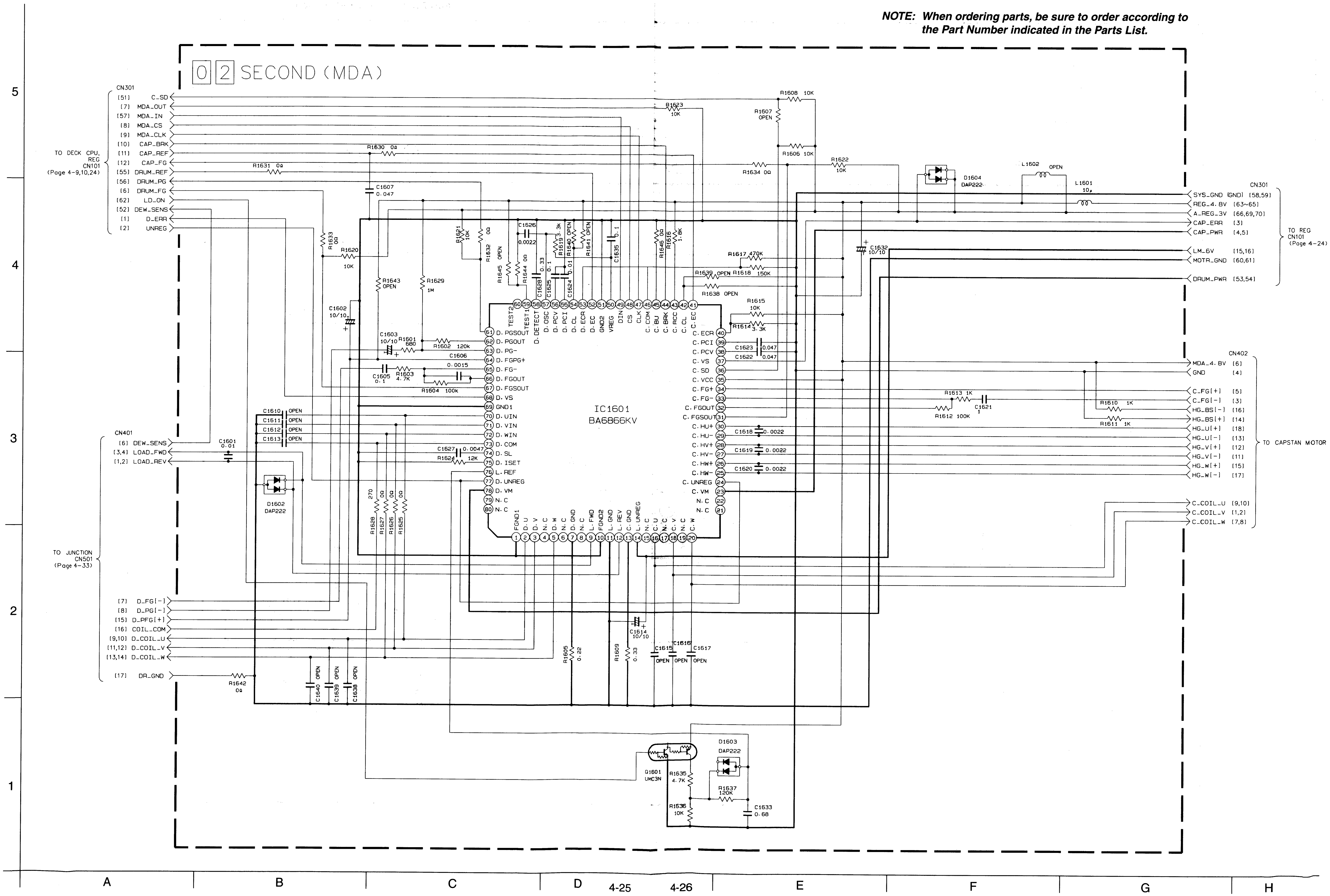

01 MAIN (REG)
F6001 NMFZ006-R50X-K
F6002 NMFZ006-1R6X-K
F6003 NMFZ006-1R6X-K
L6001 4.7μ
L6002 4.7μ
TO JACK (Page 4-5)
BATT+
GND
C6001 1
C6002 1
C6003 10/16
OPEN
Q6401
Q6402
Q6403
Q6404
Q6405
Q6406
D6401
Q6201 2SA1774/QR/-X
Q6202 2SD1628/FG/-X
Q6203 2SC4617/QR/-X
L6401 22μ
IC6001
FA3675F
Q6101 CPH3304
Q6111 CPH3304
Q6121 CPH3304
Q6131 CPH3304
Q6141 CPH3304
Q6151 CPH3304
D6101 U1FWJ44N
D6111 U1FWJ44N
D6121 U1FWJ44N
D6131 U1FWJ44N
D6141 U1FWJ44N
L6101 39μ
L6111 39μ
L6121 47μ
L6131 47μ
L6141 39μ
L6151 220μ
Q6112 2SB1121/ST/-X
Q6113 2SC4617/QR/-X
F6004 NMFZ006-R50X-K
Q6142 2SA1774/QR/-X
Q6143 2SC4617/QR/-X
D6142 1SS355
D6143 1SS355
D6155 MA8091/L/-X
Q6152 HN1C01FU/G/-X
Q6153 HN1A01FU/G/-X
Q6154 2SA1577/QR/-X
Q6155 2SC4617/QR/-X
Q6156 2SC4617/QR/-X
Q6157 2SA1774/QR/-X
Q6158 DTC144EE
D6152 1SS357
D6153 1SS357
D6154 1SS357
Q6301 DTC144EE
Q6302 2SK1830
Q6303 2SJ347
Q6304 2SK1830
Q6305 2SJ501
IC6301 S-80842ANNP-W
C6301 0.01
C6302 OPEN
SP_UNREG (CN101-89,90)
UNREG
Z_UNREG (OPEN)
LM_6V (CN101-15,16)
LP_UNREG (CN108-1)
LAMP_ON TO SYSCON (Page 4-7)
GND (MOTOR)
REG_3V
A_REG_3V
D_REG_3V
REG_4.8V
VFREG4.8
VF_CTL TO SYSCON (Page 4-8)
GND
DRUM_PWR (CN101-53,54)
DRUM_ERR TO DECK CPU (Page 4-10)
CN101
CAP_PWR [4,5]
CAP_ERR [3]
TO MDA CN301 (Page 4-26)
REG_2.2V
REG_12V
REG_15V (CN102-18)
REG_-15V (CN102-19)
REG-6.5V TO TG CDS (Page 4-21)
PWR_CTL
SW_UNREG
AL_3V
TO SYSCON, DECK CPU, JIG CONN (Page 4-7,9,24)
5
4
3
2
1

NOTE : COMPARISON CHART OF MODELS & MARKS (#)

REF. NO / MODELS	Q6156	Q6201 ~ Q6203	R6167	R6201 ~ R6203	R6205 R6206	C6161	C6201	CN108
GR-DVL20	USED	OPEN	USED	OPEN	OPEN	USED	OPEN	OPEN
GR-DVL30/DVL40	OPEN	USED	OPEN	USED	USED	OPEN	USED	USED

4.12 MDA SCHEMATIC DIAGRAM

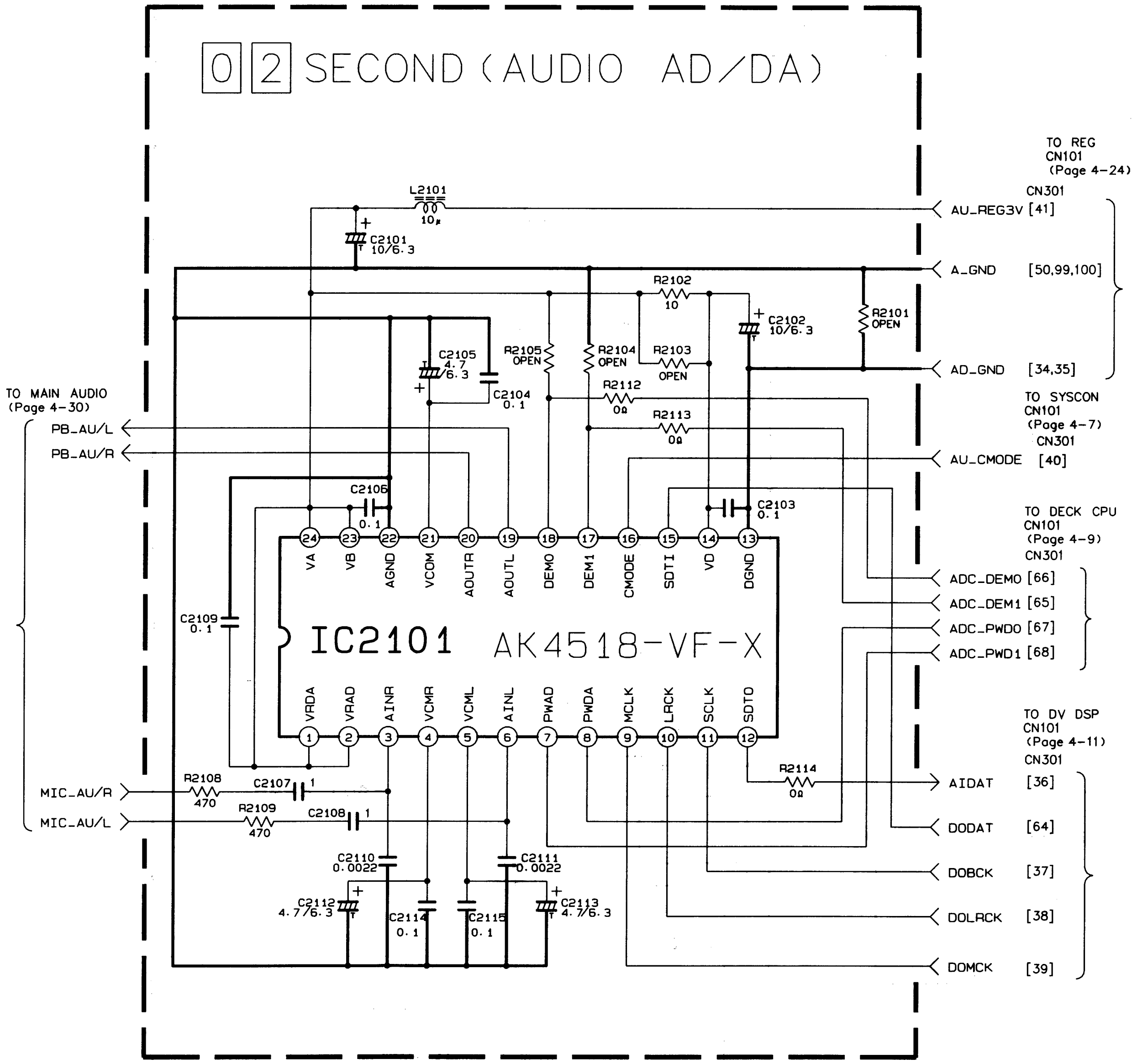
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



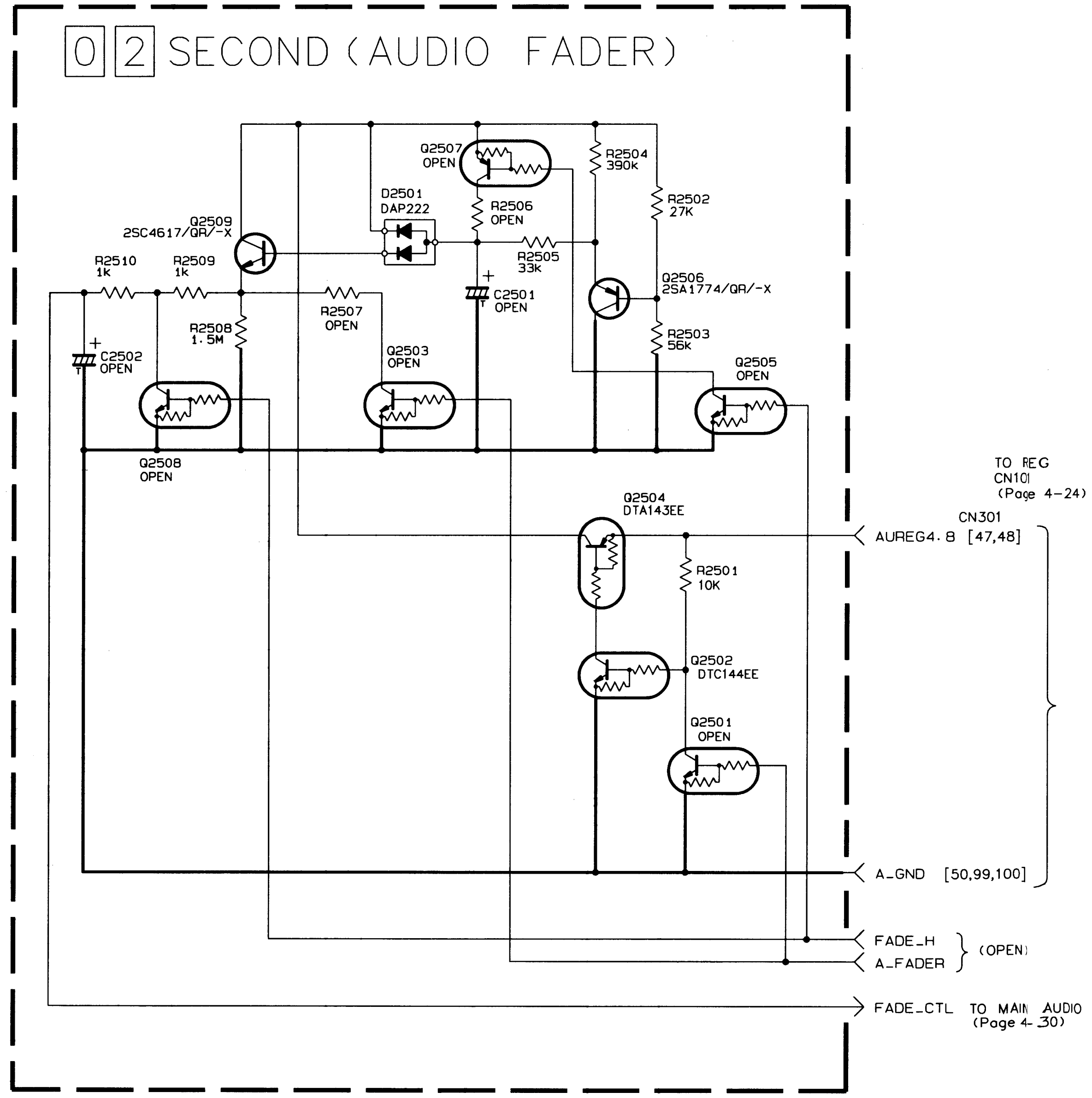
02 SECOND (MDA)
CN301
[51] C_SD
[7] MDA_OUT
[57] MDA_IN
[8] MDA_CS
[9] MDA_CLK
[10] CAP_BRK
[11] CAP_REF
[12] CAP_FG
[55] DRUM_REF
[56] DRUM_PG
[6] DRUM_FG
[62] LD_ON
[52] DEW_SENS
[1] D_ERR
[2] UNREG
TO DECK CPU, REG CN101 (Page 4-9,10,24)
CN401
[6] DEW_SENS
[3,4] LOAD_FWD
[1,2] LOAD_REV
TO JUNCTION CN501 (Page 4-33)
[7] D_FG[-]
[8] D_PG[-]
[15] D_PFG[+]
[16] COIL_COM
[9,10] D_COIL_U
[11,12] D_COIL_V
[13,14] D_COIL_W
[17] DR_GND
R1642 0Ω
C1601 0.01
D1602 DAP222
C1610 OPEN
C1611 OPEN
C1612 OPEN
C1613 OPEN
R1630 0Ω
R1631 0Ω
C1607 0.047
R1633 0Ω
R1620 10K
C1602 10/10
R1643 OPEN
R1629 1M
C1603 10/10
R1601 680
R1602 120K
C1606 0.0015
C1605 0.1
R1603 4.7K
R1604 100K
C1627 0.0047
R1624 12K
R1628 270
R1627 0Ω
R1626 0Ω
R1625 0Ω
C1640 OPEN
C1639 OPEN
C1638 OPEN
R1621 10K
R1632 0Ω
R1645 OPEN
R1644 0Ω
C1626 0.0022
C1628 0.33
C1625 0.1
R1619 3.3K
C1624 0.01
R1640 OPEN
R1641 OPEN
C1635 0.1
R1646 0Ω
R1616 1.8K
IC1601 BA6866KV
41 C.EC
42 C.CL
43 C.RCC
44 C.BRK
45 C.BU
46 C.COM
47 CLK
48 CS
49 DIN
50 VREG
51 GND2
52 D.EC
53 D.ECR
54 D.CL
55 D.PCI
56 D.PCV
57 D.OSC
58 D.DETECT
59 TEST1
60 TEST2
61 D.PGSOUT
62 D.PGOUT
63 D.PG-
64 D.FGPG+
65 D.FG-
66 D.FGOUT
67 D.FGSOUT
68 D.VS
69 GND1
70 D.UIN
71 D.VIN
72 D.WIN
73 D.COM
74 D.SL
75 D.ISET
76 L.REF
77 D.UNREG
78 D.VM
79 N.C
80 N.C
1 FGND1
2 D.U
3 D.V
4 D.W
5 N.C
6 D.GND
7 N.C
8 L.FWD
9 FGND2
10 L.REV
11 L.GND
12 C.GND
13 L.UNREG
14 N.C
15 C.U
16 N.C
17 C.V
18 N.C
19 C.W
40 C.ECR
39 C.PCI
38 C.PCV
37 C.VS
36 C.SD
35 C.VCC
34 C.FG+
33 C.FG-
32 C.FGOUT
31 C.FGSOUT
30 C.HU+
29 C.HU-
28 C.HV+
27 C.HV-
26 C.HW+
25 C.HW-
24 C.UNREG
23 C.VM
22 N.C
21 N.C
R1605 0.22
R1609 0.33
C1614 10/10
C1615 OPEN
C1616 OPEN
C1617 OPEN
R1623 10K
R1608 10K
R1607 OPEN
R1606 10K
R1634 0Ω
R1622 10K
R1617 470K
R1639 OPEN
R1618 150K
R1638 OPEN
C1632 10/10
R1615 10K
R1614 3.3K
C1623 0.047
C1622 0.047
C1618 0.0022
C1619 0.0022
C1620 0.0022
D1604 DAP222
L1602 OPEN
L1601 10μ
R1613 1K
R1612 100K
C1621 1
R1610 1K
R1611 1K
Q1601 UMC3N
R1635 4.7K
R1636 10K
D1603 DAP222
R1637 120K
C1633 0.68
CN301
SYS_GND (GND) [58,59]
REG_4.8V [63~65]
A_REG_3V [66,69,70]
CAP_ERR [3]
CAP_PWR [4,5]
LM_6V [15,16]
MOTR_GND [60,61]
DRUM_PWR [53,54]
TO REG CN101 (Page 4-24)
CN402
MDA_4.8V [6]
GND [4]
C_FG[+] [5]
C_FG[-] [3]
HG_BS[-] [16]
HG_BS[+] [14]
HG_U[+] [18]
HG_U[-] [13]
HG_V[+] [12]
HG_V[-] [11]
HG_W[+] [15]
HG_W[-] [17]
C_COIL_U [9,10]
C_COIL_V [1,2]
C_COIL_W [7,8]
TO CAPSTAN MOTOR
5
4
3
2
1
A
B
C
D
E
F
G
H

4.13 AUDIO AD/DA AND AUDIO FADER SCHEMATIC DIAGRAMS

***NOTE:** When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*



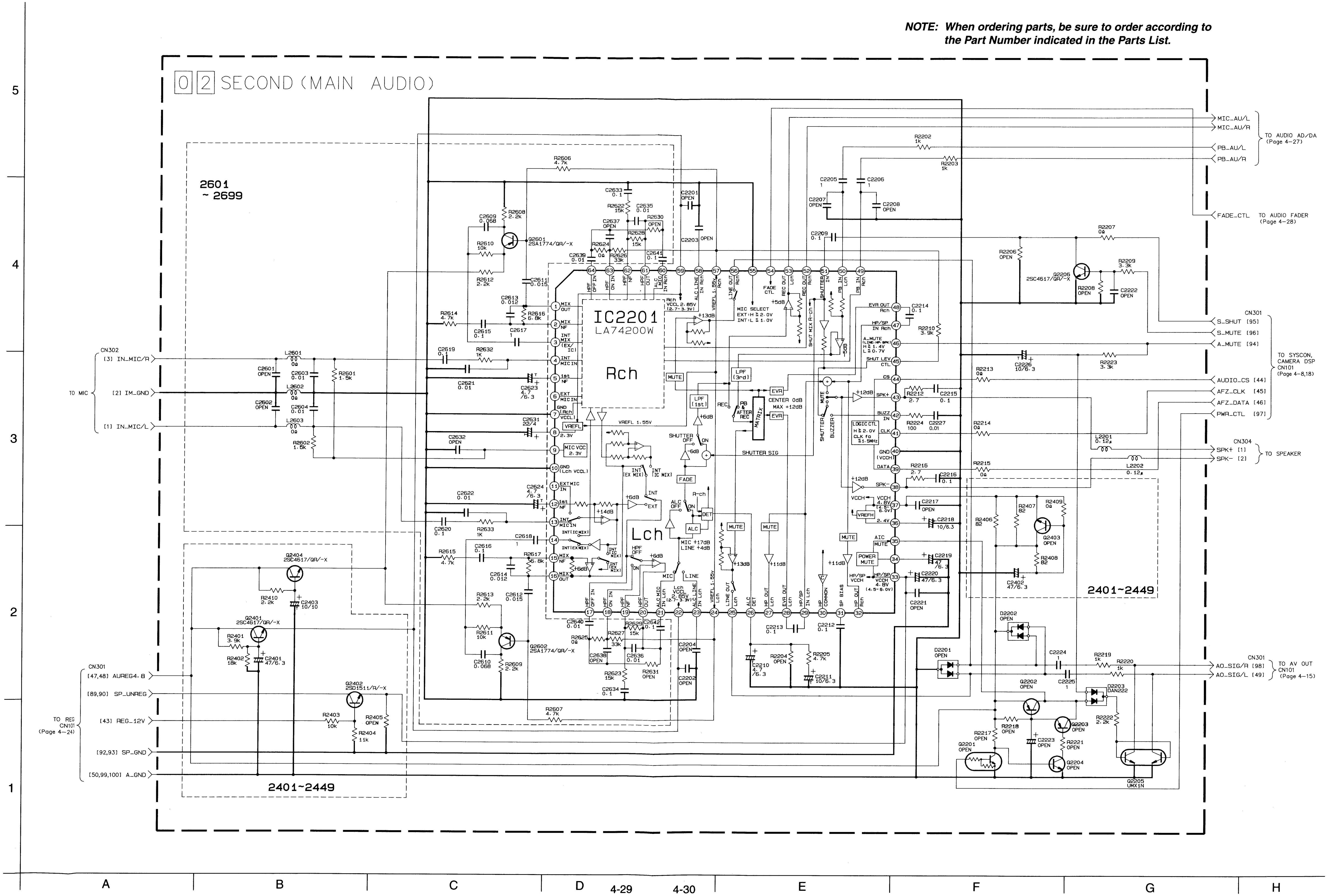
0 2 SECOND (AUDIO AD/DA)
IC2101 AK4518-VF-X
VA
VB
AGND
VCOM
AOUTR
AOUTL
DEM0
DEM1
CMODE
SDTI
VD
DGND
VRDA
VRAD
AINR
VCMR
VCML
AINL
PWAD
PWDA
MCLK
LRCK
SCLK
SDTO
L2101 10μ
C2101 10/6.3
R2102 10
C2102 10/6.3
R2101 OPEN
C2105 4.7/6.3
C2104 0.1
R2105 OPEN
R2104 OPEN
R2103 OPEN
R2112 0Ω
R2113 0Ω
C2106 0.1
C2103 0.1
C2109 0.1
R2108 470
C2107 1
R2109 470
C2108 1
C2110 0.0022
C2111 0.0022
C2112 4.7/6.3
C2113 4.7/6.3
C2114 0.1
C2115 0.1
R2114 0Ω
TO MAIN AUDIO (Page 4-30)
PB_AU/L
PB_AU/R
MIC_AU/R
MIC_AU/L
TO REG CN101 (Page 4-24)
CN301
AU_REG3V [41]
A_GND [50,99,100]
AD_GND [34,35]
TO SYSCON CN101 (Page 4-7)
CN301
AU_CMODE [40]
TO DECK CPU CN101 (Page 4-9)
CN301
ADC_DEM0 [66]
ADC_DEM1 [65]
ADC_PWD0 [67]
ADC_PWD1 [68]
TO DV DSP CN101 (Page 4-11)
CN301
AIDAT [36]
DODAT [64]
DOBCK [37]
DOLRCK [38]
DOMCK [39]



0 2 SECOND (AUDIO FADER)
Q2507 OPEN
R2504 390k
D2501 DAP222
R2506 OPEN
R2502 27K
Q2509 2SC4617/QR/-X
R2505 33k
R2510 1k
R2509 1k
C2501 OPEN
Q2506 2SA1774/QR/-X
R2508 1.5M
R2507 OPEN
R2503 56k
C2502 OPEN
Q2503 OPEN
Q2505 OPEN
Q2508 OPEN
Q2504 DTA143EE
R2501 10K
Q2502 DTC144EE
Q2501 OPEN
TO REG CN101 (Page 4-24)
CN301
AUREG4.8 [47,48]
A_GND [50,99,100]
FADE_H
A_FADER
(OPEN)
FADE_CTL
TO MAIN AUDIO (Page 4-30)

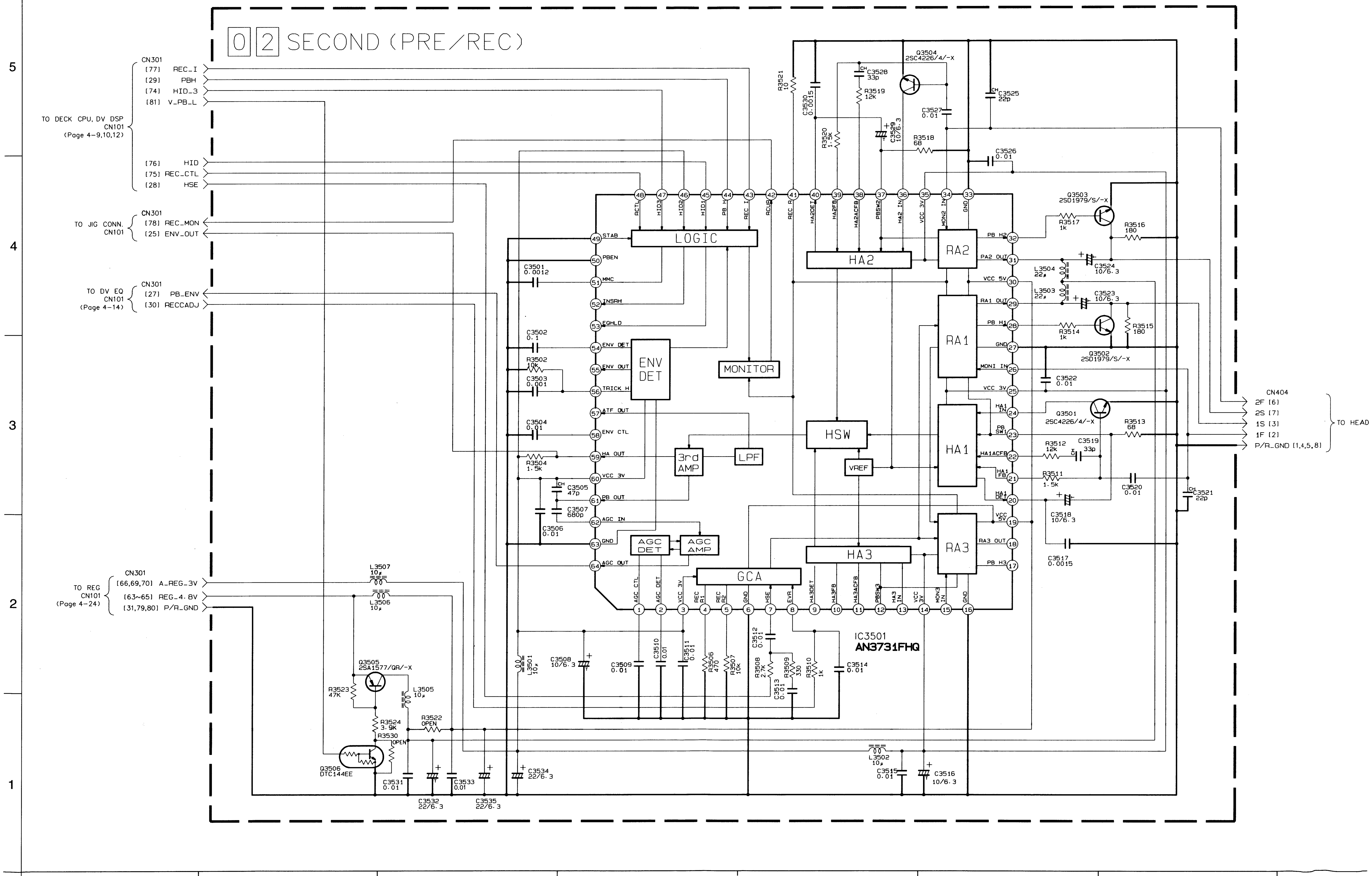
4.14 MAIN AUDIO SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


02 SECOND (MAIN AUDIO)
2601 ~ 2699
2401~2449
IC2201
LA74200W
Rch
Lch
MATRIX
CN302
[3] IN_MIC/R
[2] IM_GND
[1] IN_MIC/L
TO MIC
CN301
[47,48] AUREG4.8
[89,90] SP_UNREG
[43] REG_12V
[92,93] SP_GND
[50,99,100] A_GND
TO REG CN101 (Page 4-24)
MIC_AU/L
MIC_AU/R
PB_AU/L
PB_AU/R
TO AUDIO AD/DA (Page 4-27)
FADE_CTL
TO AUDIO FADER (Page 4-28)
CN301
S_SHUT [95]
S_MUTE [96]
A_MUTE [94]
AUDIO_CS [44]
AFZ_CLK [45]
AFZ_DATA [46]
PWR_CTL [97]
TO SYSCON, CAMERA DSP CN101 (Page 4-8,18)
CN304
SPK+ [1]
SPK- [2]
TO SPEAKER
CN301
AO_SIG/R [98]
AO_SIG/L [49]
TO AV OUT CN101 (Page 4-15)
Q2601 2SA1774/QR/-X
Q2602 2SA1774/QR/-X
Q2404 2SC4617/QR/-X
Q2401 2SC4617/QR/-X
Q2402 2SD1511/R/-X
Q2403 OPEN
Q2206 2SC4517/QR/-X
Q2201 OPEN
Q2202 OPEN
Q2203 OPEN
Q2204 OPEN
Q2205 UMX1N
D2201 OPEN
D2202 OPEN
D2203 DAN222
L2601 0Ω
L2602 0Ω
L2603 0Ω
L2201 0.12μ
L2202 0.12μ
R2601 1.5k
R2602 1.5k
C2601 OPEN
C2602 OPEN
C2603 0.01
C2604 0.01
R2606 4.7k
R2607 4.7k
R2608 2.2k
R2609 2.2k
R2610 10k
R2611 10k
R2612 2.2k
R2613 2.2k
R2614 4.7k
R2615 4.7k
R2616 6.8k
R2617 6.8k
R2622 15k
R2623 15k
R2624 0Ω
R2625 0Ω
R2626 33k
R2627 33k
R2628 15k
R2629 15k
R2630 OPEN
R2631 OPEN
R2632 1K
R2633 1K
C2609 0.068
C2610 0.068
C2611 0.015
C2612 0.015
C2613 0.012
C2614 0.012
C2615 0.1
C2616 0.1
C2617 1
C2618 1
C2619 0.1
C2620 0.1
C2621 0.01
C2622 0.01
C2623 4.7 /6.3
C2624 4.7 /6.3
C2631 22/4
C2632 OPEN
C2633 0.1
C2634 0.1
C2635 0.01
C2636 0.01
C2637 OPEN
C2638 OPEN
C2639 0.01
C2640 0.01
C2641 0.1
C2642 0.1
R2401 3.9k
R2402 18k
R2403 10k
R2404 11k
R2405 OPEN
R2410 2.2k
C2401 47/6.3
C2403 10/10
C2402 47/6.3
R2406 82
R2407 82
R2408 82
R2409 0Ω
R2202 1k
R2203 1k
R2204 OPEN
R2205 4.7k
R2206 OPEN
R2207 0Ω
R2208 OPEN
R2209 3.3k
R2210 3.9k
R2212 2.7
R2213 0Ω
R2214 0Ω
R2215 0Ω
R2216 2.7
R2217 OPEN
R2218 OPEN
R2219 1k
R2220 1k
R2221 OPEN
R2222 2.2k
R2223 3.3k
R2224 100
C2201 OPEN
C2202 OPEN
C2203 OPEN
C2204 OPEN
C2205 1
C2206 1
C2207 OPEN
C2208 OPEN
C2209 0.1
C2210 4.7 /6.3
C2211 10/6.3
C2212 0.1
C2213 0.1
C2214 0.1
C2215 0.1
C2216 0.1
C2217 OPEN
C2218 10/6.3
C2219 47 /6.3
C2220 47/6.3
C2221 OPEN
C2222 OPEN
C2223 OPEN
C2224 1
C2225 1
C2226 10/6.3
C2227 0.01
MIX OUT
MIX NF
INT MIX (EX/IC)
INT MIC IN
1st NF
EXT MIC IN
GND (Rch VCCL)
2.3V
MIC VCC 2.3V
GND (Lch VCCL)
EXT MIC IN
1st NF
INT MIC IN
INT (IC MIX)
MIX NF
MIX OUT
HPF OFF IN
HPF ON IN
HPF NF
HPF OUT
ALC MIC IN Rch
ALC LINE IN Rch
VREFL 1.55V
LINE OUT Rch
FADE CTL
REC OUT Lch
REC OUT Rch
SHUTTER IN
PB IN Lch
PB IN Rch
Rch VCCL 2.85V (2.7~3.3V)
MIC SELECT EXT:H ≧ 2.0V INT:L ≦ 1.0V
+13dB
+5dB
-5dB
MUTE
LPF (3rd)
LPF (1st)
EVR
CENTER 0dB MAX +12dB
REC PB AFTER REC
+6dB
SHUTTER OFF ON
-6dB
SHUTTER SIG
VREFL 1.55V
INT (EX MIX)
INT (IC MIX)
EXT
+6dB
+14dB
FADE
R-ch
ALC OFF ON
DET
ALC
MIC +17dB LINE +4dB
HPF OFF ON
MIC LINE
Lch VCCL 2.85V (2.7~3.3V)
+11dB
SP BIAS
HP COMMON
EVR OUT Rch
HP/SP IN Rch
A_MUTE (LINE, HP, SP) H ≧ 1.4V L ≦ 0.7V
SHUT LEV CTL
CS
+12dB SPK+
BUZZ IN
LOGIC CTL H ≧ 2.0V CLK fo ≦ 1.5MHz
CLK
GND (VCCH)
DATA
SPK-
VCCH 4.8V (4.5~6.0V)
VREFH 2.4V
AIC MUTE
POWER MUTE
HP/SP VCCH
VCCH 4.8V (4.5~6.0V)
ALC DET
HP OUT Lch
EVR OUT Lch
HP/SP IN Lch
HP OUT Rch
5
4
3
2
1
A
B
C
D
E
F
G
H

4.15 PRE/REC SCHEMATIC DIAGRAM

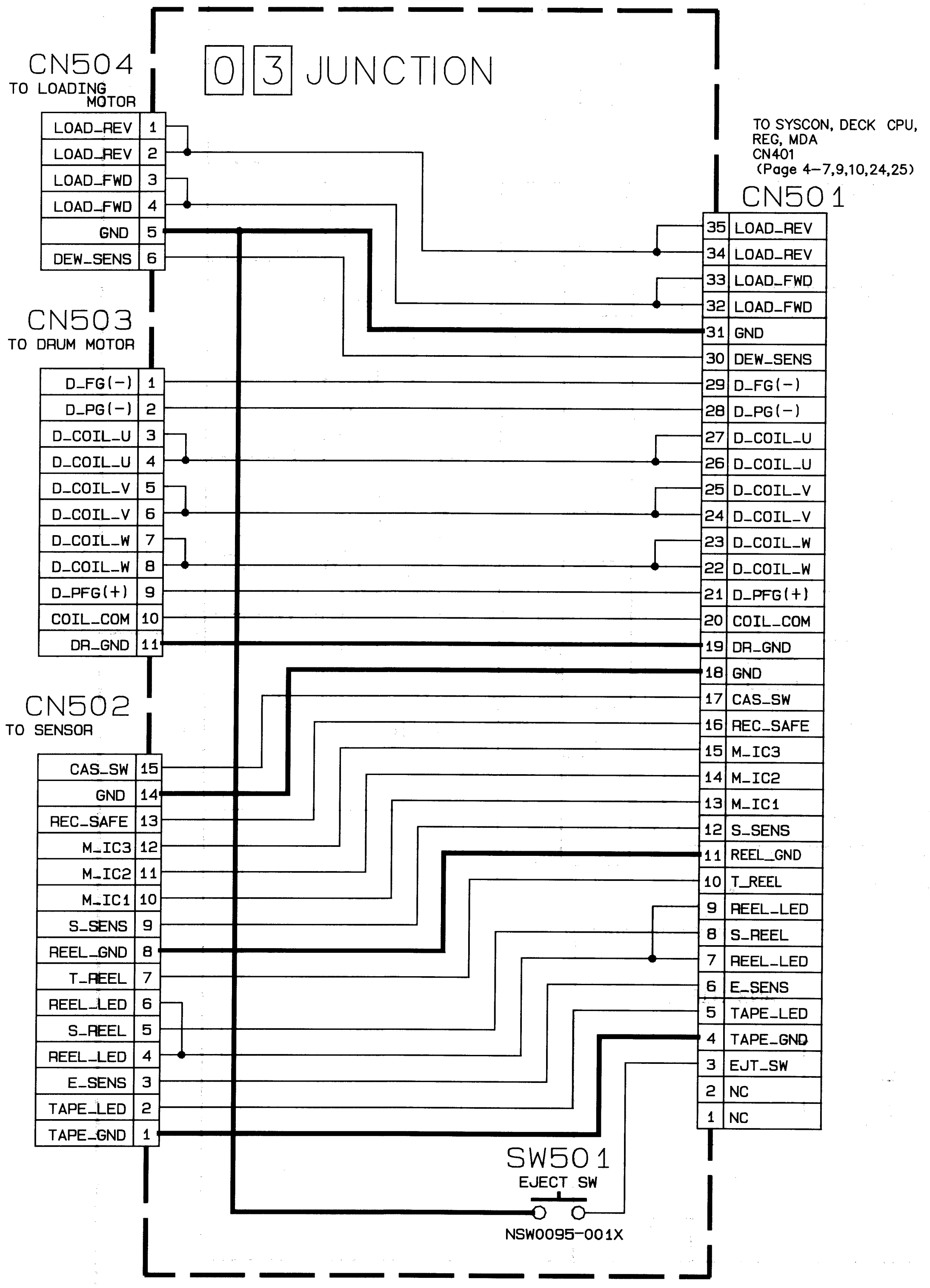
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


0 2 SECOND (PRE/REC)
CN301
[77] REC_I
[29] PBH
[74] HID_3
[81] V_PB_L
TO DECK CPU, DV DSP CN101 (Page 4-9,10,12)
[76] HID
[75] REC_CTL
[28] HSE
TO JIG CONN. CN101
[78] REC_MON
[25] ENV_OUT
TO DV EQ CN101 (Page 4-14)
[27] PB_ENV
[30] RECCADJ
TO REG CN101 (Page 4-24)
[66,69,70] A_REG_3V
[63~65] REG_4.8V
[31,79,80] P/R_GND
LOGIC
ENV DET
MONITOR
3rd AMP
LPF
AGC DET
AGC AMP
GCA
HA2
RA2
RA1
HSW
VREF
HA1
HA3
RA3
IC3501
AN3731FHQ
CN404
2F [6]
2S [7]
1S [3]
1F [2]
P/R_GND [1,4,5,8]
TO HEAD
Q3504 2SC4226/4/-X
Q3503 2SD1979/S/-X
Q3502 2SD1979/S/-X
Q3501 2SC4226/4/-X
Q3505 2SA1577/QR/-X
Q3506 DTC144EE
R3521 10
C3530 0.0015
C3528 33p
R3519 12K
C3525 22p
C3527 0.01
R3520 1.5K
C3529 10/6.3
R3518 68
C3526 0.01
R3517 1k
R3516 180
C3524 10/6.3
L3504 22μ
L3503 22μ
C3523 10/6.3
R3514 1k
R3515 180
C3522 0.01
R3513 68
R3512 12k
C3519 33p
R3511 1.5k
C3520 0.01
C3521 22p
C3518 10/6.3
C3517 0.0015
C3501 0.0012
C3502 0.1
R3502 10k
C3503 0.001
C3504 0.01
R3504 1.5k
C3505 47p
C3507 680p
C3506 0.01
L3507 10μ
L3506 10μ
L3501 10μ
C3508 10/6.3
C3509 0.01
C3510 0.01
C3511 0.01
R3506 470
R3507 10k
C3512 0.01
R3508 2.7K
C3513 0.01
R3509 330
R3510 1k
C3514 0.01
R3523 47K
L3505 10μ
R3524 3.9K
R3530 OPEN
R3522 OPEN
C3531 0.01
C3532 22/6.3
C3533 0.01
C3535 22/6.3
C3534 22/6.3
L3502 10μ
C3515 0.01
C3516 10/6.3
48 RCTL
47 HID3
46 HID2
45 HID1
44 PB H
43 REC I
42 RCUR
41 REC R
40 HA2DET
39 HA2FB
38 HA2ACFB
37 PBSW2
36 HA2 IN
35 VCC 3V
34 MON2 IN
33 GND
49 STAB
50 PBEN
51 MMC
52 INSRH
53 EQHLD
54 ENV DET
55 ENV OUT
56 TRICK H
57 ATF OUT
58 ENV CTL
59 HA OUT
60 VCC 3V
61 PB OUT
62 AGC IN
63 GND
64 AGC OUT
32 PB H2
31 PA2 OUT
30 VCC 5V
29 RA1 OUT
28 PB H1
27 GND
26 MONI IN
25 VCC 3V
24 HA1 IN
23 PB SW1
22 HA1ACFB
21 HA1 FB
20 HA1 DET
19 VCC 5V
18 RA3 OUT
17 PB H3
1 AGC CTL
2 AGC DET
3 VCC 3V
4 REC R1
5 REC R2
6 GND
7 HSE
8 EVR
9 HA3DET
10 HA3FB
11 HA3ACFB
12 PBSW3
13 HA3 IN
14 VCC 3V
15 MON3 IN
16 GND
5
4
3
2
1
A
B
C
D
E
F
G
H

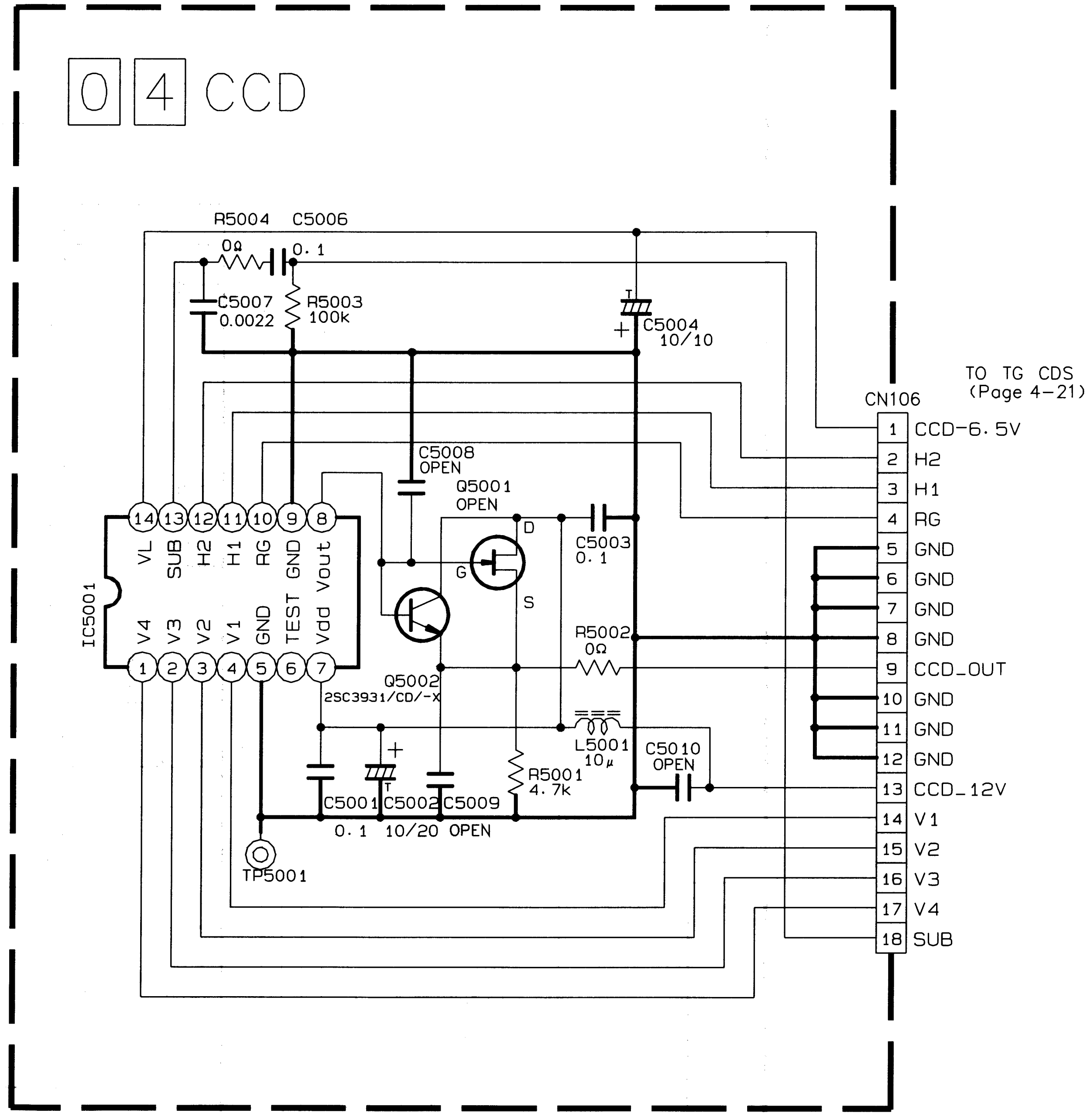
4.16 JUNCTION AND CCD SCHEMATIC DIAGRAMS

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

Note: IC5001 is incorporated in the CCD base assembly. When IC5001 needs replacement, replace the CCD base assembly in whole because it cannot be replaced alone.



03 JUNCTION
CN504
TO LOADING MOTOR
LOAD_REV 1
LOAD_REV 2
LOAD_FWD 3
LOAD_FWD 4
GND 5
DEW_SENS 6
CN503
TO DRUM MOTOR
D_FG(-) 1
D_PG(-) 2
D_COIL_U 3
D_COIL_U 4
D_COIL_V 5
D_COIL_V 6
D_COIL_W 7
D_COIL_W 8
D_PFG(+) 9
COIL_COM 10
DR_GND 11
CN502
TO SENSOR
CAS_SW 15
GND 14
REC_SAFE 13
M_IC3 12
M_IC2 11
M_IC1 10
S_SENS 9
REEL_GND 8
T_REEL 7
REEL_LED 6
S_REEL 5
REEL_LED 4
E_SENS 3
TAPE_LED 2
TAPE_GND 1
TO SYSCON, DECK CPU, REG, MDA CN401 (Page 4-7,9,10,24,25)
CN501
35 LOAD_REV
34 LOAD_REV
33 LOAD_FWD
32 LOAD_FWD
31 GND
30 DEW_SENS
29 D_FG(-)
28 D_PG(-)
27 D_COIL_U
26 D_COIL_U
25 D_COIL_V
24 D_COIL_V
23 D_COIL_W
22 D_COIL_W
21 D_PFG(+)
20 COIL_COM
19 DR_GND
18 GND
17 CAS_SW
16 REC_SAFE
15 M_IC3
14 M_IC2
13 M_IC1
12 S_SENS
11 REEL_GND
10 T_REEL
9 REEL_LED
8 S_REEL
7 REEL_LED
6 E_SENS
5 TAPE_LED
4 TAPE_GND
3 EJT_SW
2 NC
1 NC
SW501
EJECT SW
NSW0095-001X



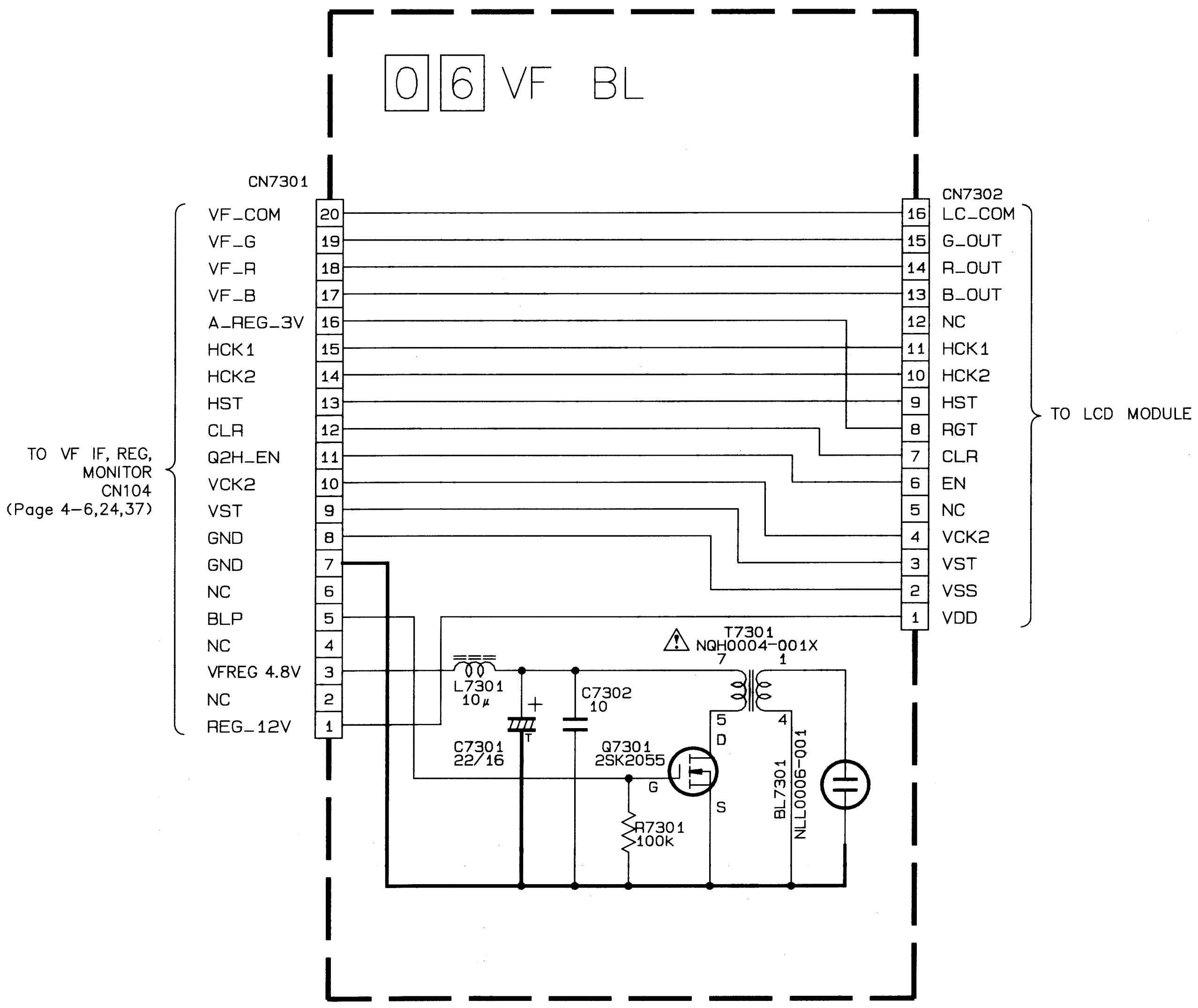
04 CCD
R5004
C5006
0Ω
0.1
C5007
0.0022
R5003
100k
C5004
10/10
C5008
OPEN
Q5001
OPEN
D
G
S
C5003
0.1
R5002
0Ω
IC5001
VL
SUB
H2
H1
RG
TEST GND
Vdd Vout
V4
V3
V2
V1
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
Q5002
2SC3931/CD/-X
L5001
10µ
R5001
4.7k
C5010
OPEN
C5001 C5002 C5009
0.1 10/20 OPEN
TP5001
CN106
TO TG CDS (Page 4-21)
1 CCD-6.5V
2 H2
3 H1
4 RG
5 GND
6 GND
7 GND
8 GND
9 CCD_OUT
10 GND
11 GND
12 GND
13 CCD_12V
14 V1
15 V2
16 V3
17 V4
18 SUB

4.17 VF BL, ZOOM UNIT AND OPE. COVER UNIT SCHEMATIC DIAGRAMS

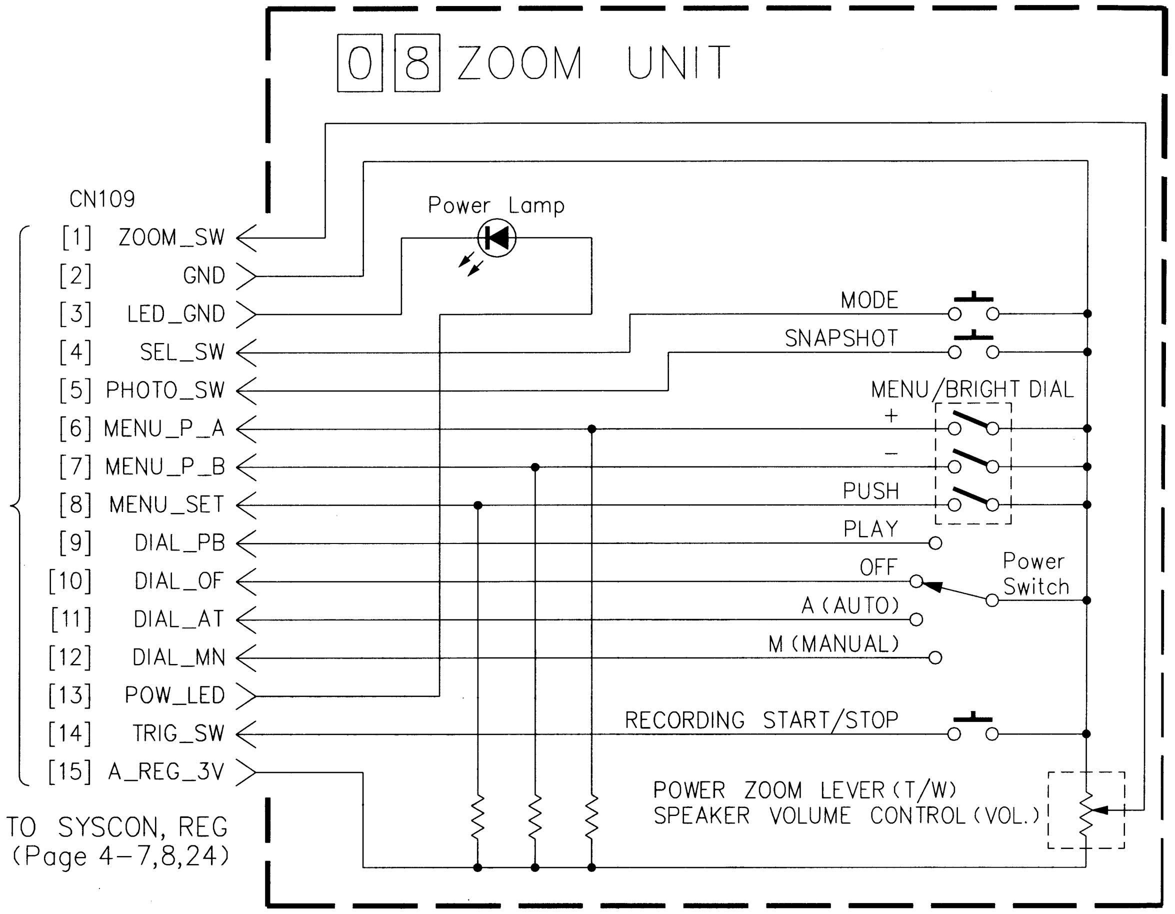
NOTE: The schematic diagrams are only for reference. Avoid replacing individual parts. Replace the entire unit only.

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

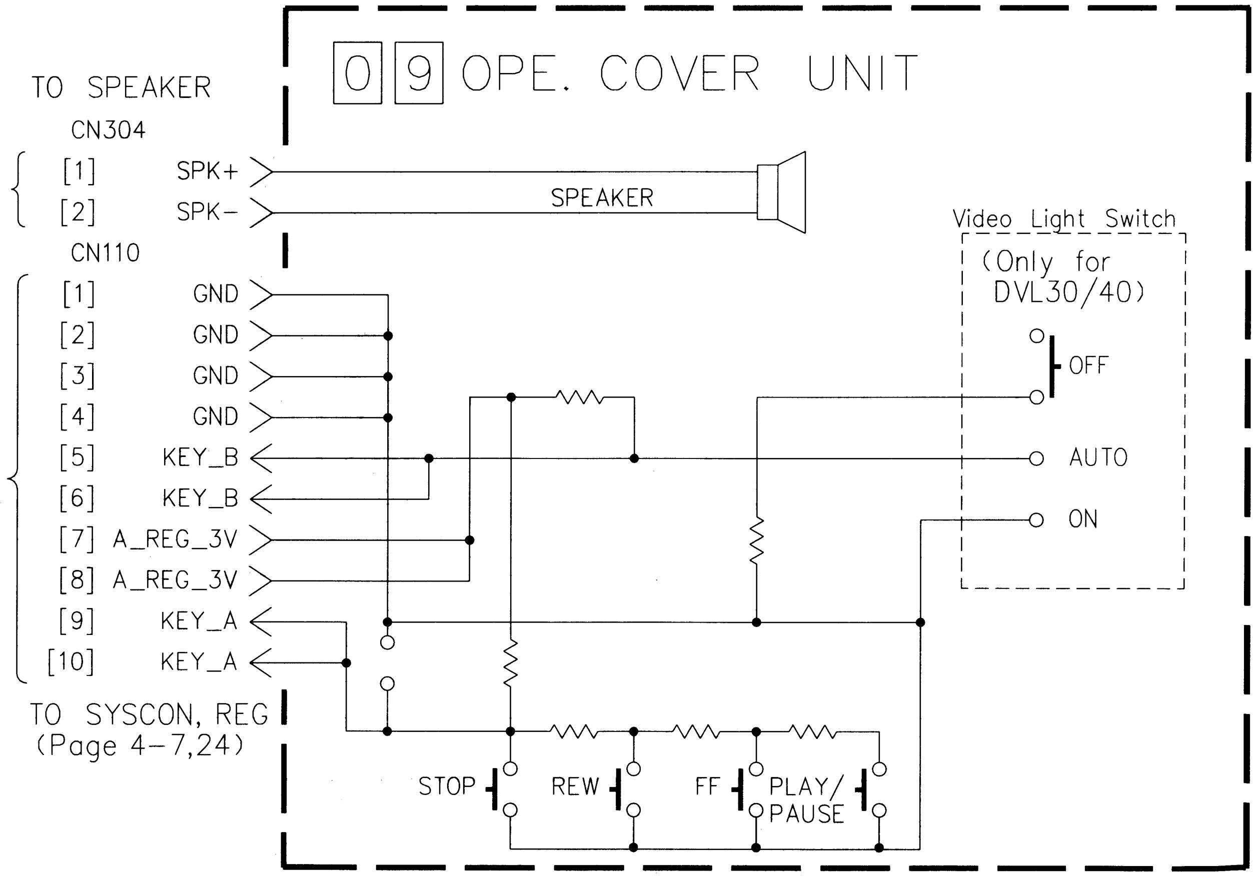
(FOR DVL 40)



06 VF BL
CN7301
VF_COM 20
VF_G 19
VF_R 18
VF_B 17
A_REG_3V 16
HCK1 15
HCK2 14
HST 13
CLR 12
Q2H_EN 11
VCK2 10
VST 9
GND 8
GND 7
NC 6
BLP 5
NC 4
VFREG 4.8V 3
NC 2
REG_12V 1
TO VF IF, REG, MONITOR CN104 (Page 4-6,24,37)
CN7302
16 LC_COM
15 G_OUT
14 R_OUT
13 B_OUT
12 NC
11 HCK1
10 HCK2
9 HST
8 RGT
7 CLR
6 EN
5 NC
4 VCK2
3 VST
2 VSS
1 VDD
TO LCD MODULE
T7301
NQH0004-001X
7
1
5
D
4
L7301
10μ
C7302
10
C7301
22/16
Q7301
2SK2055
G
S
R7301
100k
BL7301
NLL0006-001



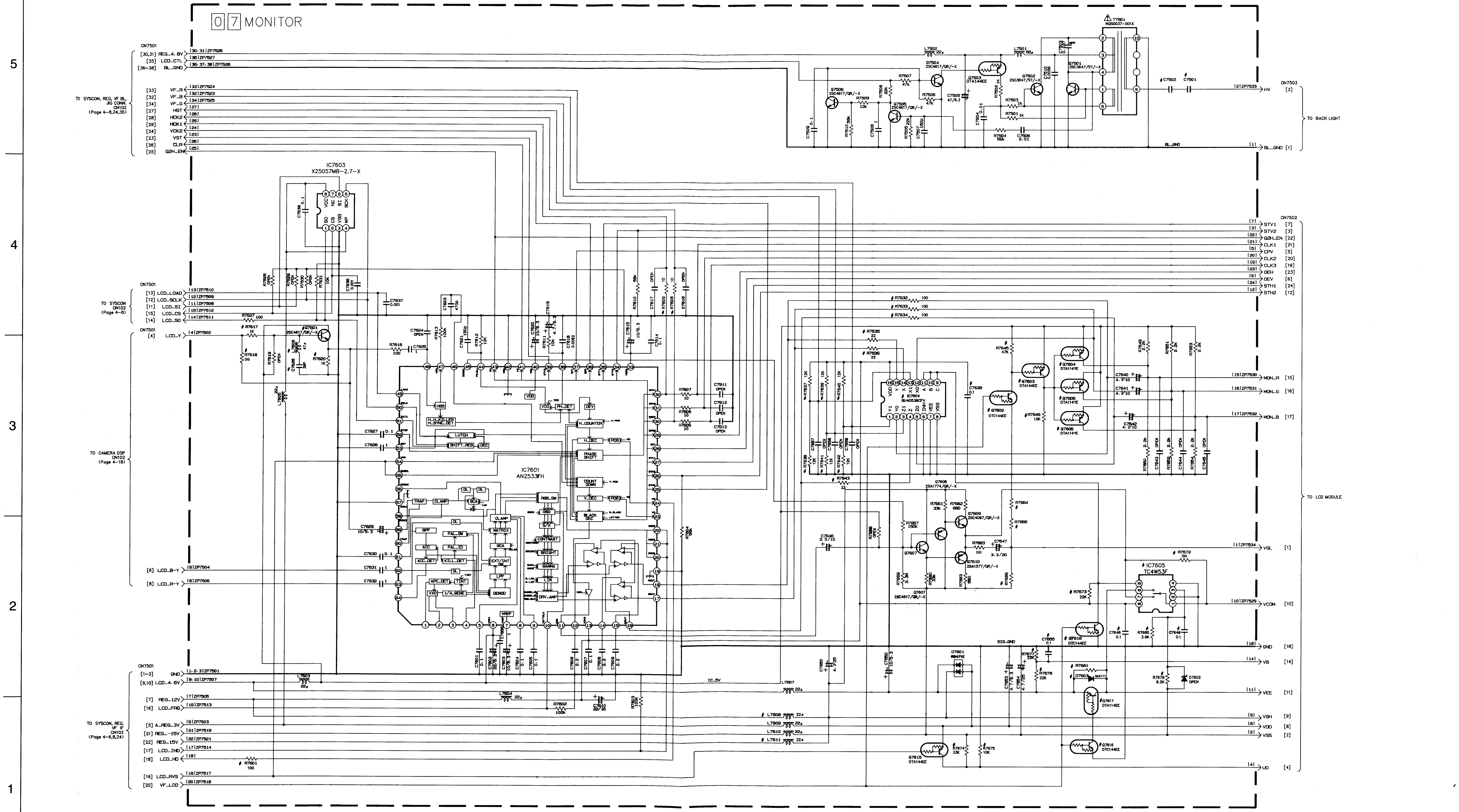
08 ZOOM UNIT
CN109
[1] ZOOM_SW
[2] GND
[3] LED_GND
[4] SEL_SW
[5] PHOTO_SW
[6] MENU_P_A
[7] MENU_P_B
[8] MENU_SET
[9] DIAL_PB
[10] DIAL_OF
[11] DIAL_AT
[12] DIAL_MN
[13] POW_LED
[14] TRIG_SW
[15] A_REG_3V
TO SYSCON, REG (Page 4-7,8,24)
Power Lamp
MODE
SNAPSHOT
MENU/BRIGHT DIAL
+
–
PUSH
PLAY
OFF
A (AUTO)
M (MANUAL)
Power Switch
RECORDING START/STOP
POWER ZOOM LEVER (T/W)
SPEAKER VOLUME CONTROL (VOL.)



09 OPE. COVER UNIT
TO SPEAKER
CN304
[1] SPK+
[2] SPK–
SPEAKER
CN110
[1] GND
[2] GND
[3] GND
[4] GND
[5] KEY_B
[6] KEY_B
[7] A_REG_3V
[8] A_REG_3V
[9] KEY_A
[10] KEY_A
TO SYSCON, REG (Page 4-7,24)
Video Light Switch
(Only for DVL30/40)
OFF
AUTO
ON
STOP
REW
FF
PLAY/PAUSE

4.18 MONITOR SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



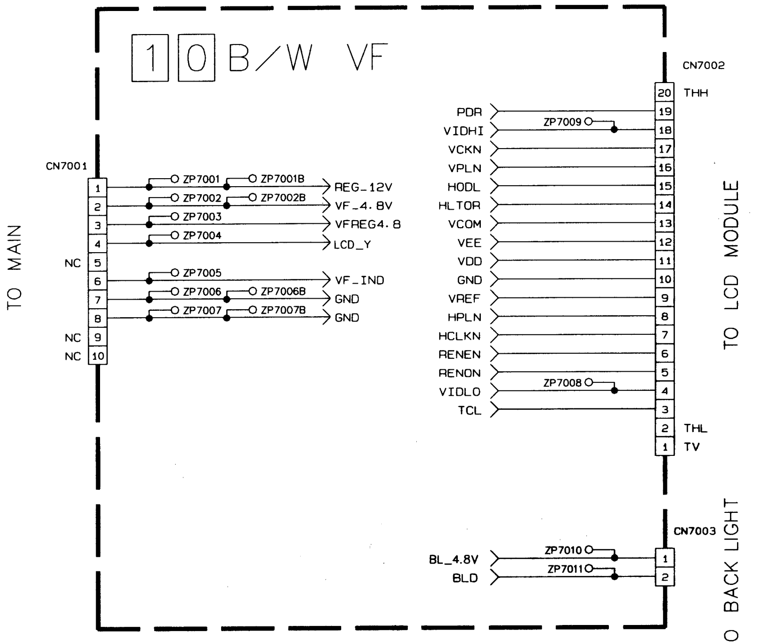
07 MONITOR
CN7501
TO SYSCON, REG, VF BL, JIG CONN CN102 (Page 4-8,24,35)
REG_4.8V
LCD_CTL
BL_GND
VF_R
VF_B
VF_G
HST
HCK2
HCK1
VCK2
VST
CLR
G2H_EN
T7501 N2S0037-001X
TO BACK LIGHT
HV
BL_GND
CN7503
IC7603 X25057MB-2.7-X
TO SYSCON CN102 (Page 4-8)
LCD_LOAD
LCD_SCLK
LCD_SI
LCD_CS
LCD_SO
LCD_Y
TO CAMERA DSP CN102 (Page 4-18)
LCD_B-Y
LCD_R-Y
IC7601 AN2533FH
IC7604 BU4053BCF
IC7605 TC4W53F
CN7502
STV1
STV2
G2H_EN
CLK1
CPV
CLK2
CLK3
OEH
OEV
STH1
STH2
MON_R
MON_G
MON_B
TO LCD MODULE
VGL
VCOM
GND
VB
VEE
VGH
VDD
VSS
UD
TO SYSCON, REG, VF IF CN102 (Page 4-6,8,24)
GND
LCD_4.6V
REG_12V
LCD_FRG
A_REG_3V
REG_-15V
REG_15V
LCD_IND
LCD_HD
LCD_RVS
VF_LCD
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTES : 1. COMPARISON CHART OF MODELS & MARKS (#) 2. For MONITOR OVER ALL, please refer to page 4-39.

REF. NO / MODELS	IC7604 IC7605	Q7601 ~ Q7606	Q7616 ~ Q7618	D7603	R7601 R7608 R7609	R7617	R7618	R7620	R7632 ~ R7634	R7635 ~ R7643	R7645 R7646	R7664	R7665	R7666	R7672	R7673	R7674	R7675	R7677 R7678	R7679	R7681	R7685	C7501	C7502	C7626	C7639 C7648 C7649	C7655	L7606	L7608	L7611
GR-DVL20	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	USED	OPEN	USED	OPEN	OPEN	6.8K	820	3.3K	USED	OPEN	OPEN	USED	OPEN	OPEN	0Ω	OPEN	15P	15P	OPEN	OPEN	OPEN	OPEN	OPEN	USED
GR-DVL30	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	USED	OPEN	USED	OPEN	OPEN	3.3K	33K	22K	USED	OPEN	USED	OPEN	USED	OPEN	0Ω	OPEN	15P	18P	OPEN	OPEN	USED	OPEN	USED	OPEN
GR-DVL40	USED	USED	USED	USED	USED	USED	OPEN	USED	OPEN	USED	USED	3.3K	33K	22K	OPEN	USED	USED	OPEN	USED	USED	330	USED	18P	18P	USED	USED	USED	USED	USED	OPEN

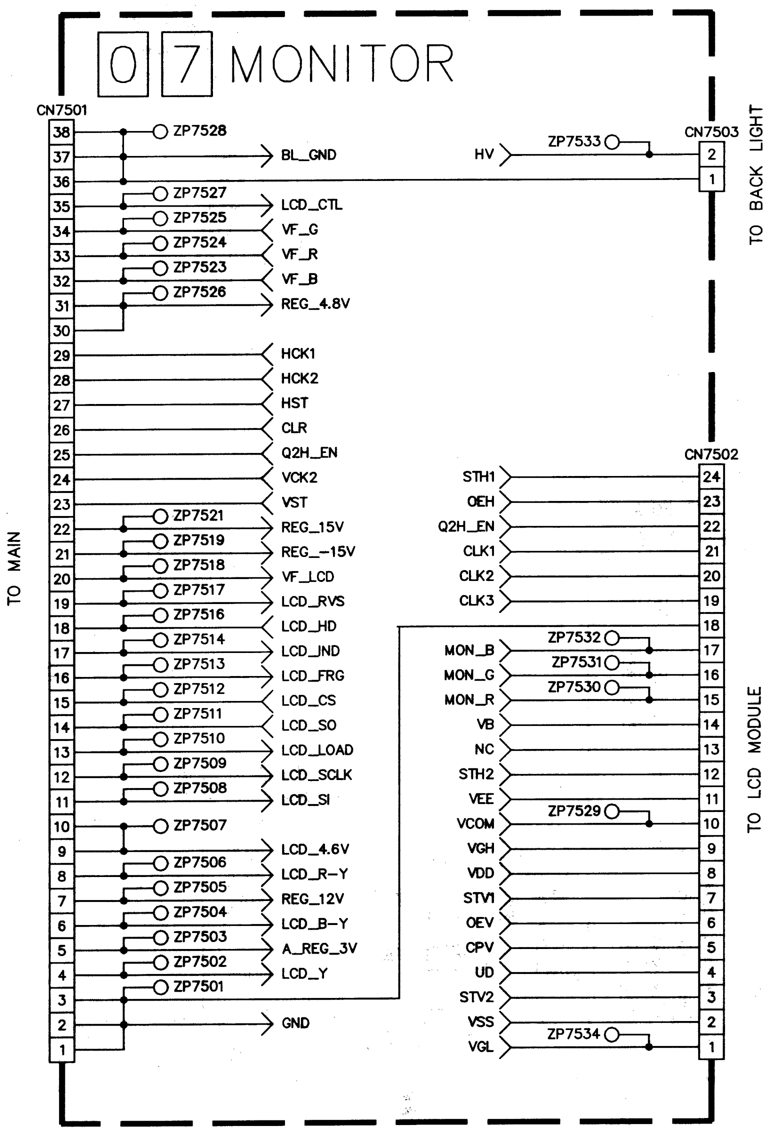
4.19 B/W VF SCHEMATIC DIAGRAM (FOR DVL20/30)

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



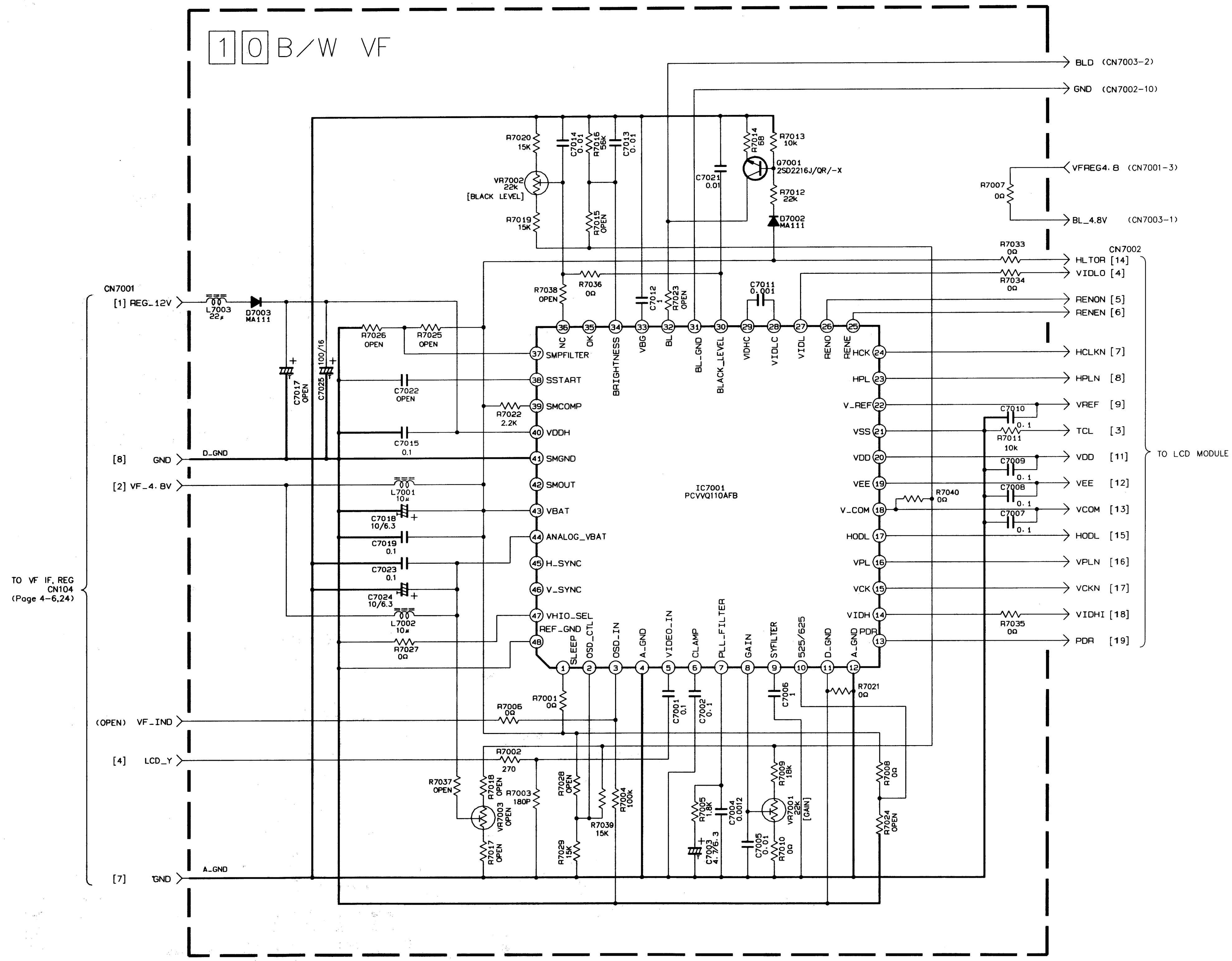
10 B/W VF
CN7001
TO MAIN
ZP7001
ZP7001B
REG_12V
ZP7002
ZP7002B
VF_4.8V
ZP7003
VFREG4.8
ZP7004
LCD_Y
NC
ZP7005
VF_IND
ZP7006
ZP7006B
GND
ZP7007
ZP7007B
GND
CN7002
THH
PDR
VIDHI
VCKN
VPLN
HODL
HLTOR
VCOM
VEE
VDD
GND
VREF
HPLN
HCLKN
RENEN
RENON
VIDLO
TCL
ZP7009
ZP7008
THL
TV
TO LCD MODULE
CN7003
BL_4.8V
BLD
ZP7010
ZP7011
TO BACK LIGHT

(For B/W VF OVER ALL)



07 MONITOR
CN7501
TO MAIN
ZP7528
BL_GND
ZP7527
LCD_CTL
ZP7525
VF_G
ZP7524
VF_R
ZP7523
VF_B
ZP7526
REG_4.8V
HCK1
HCK2
HST
CLR
Q2H_EN
VCK2
VST
ZP7521
REG_15V
ZP7519
REG_-15V
ZP7518
VF_LCD
ZP7517
LCD_RVS
ZP7516
LCD_HD
ZP7514
LCD_IND
ZP7513
LCD_FRG
ZP7512
LCD_CS
ZP7511
LCD_SO
ZP7510
LCD_LOAD
ZP7509
LCD_SCLK
ZP7508
LCD_SI
ZP7507
LCD_4.6V
ZP7506
LCD_R-Y
ZP7505
REG_12V
ZP7504
LCD_B-Y
ZP7503
A_REG_3V
ZP7502
LCD_Y
ZP7501
GND
HV
ZP7533
CN7503
TO BACK LIGHT
CN7502
STH1
OEH
Q2H_EN
CLK1
CLK2
CLK3
MON_B
ZP7532
MON_G
ZP7531
MON_R
ZP7530
VB
NC
STH2
VEE
VCOM
ZP7529
VGH
VDD
STVI
OEV
CPV
UD
STV2
VSS
VGL
ZP7534
TO LCD MODULE

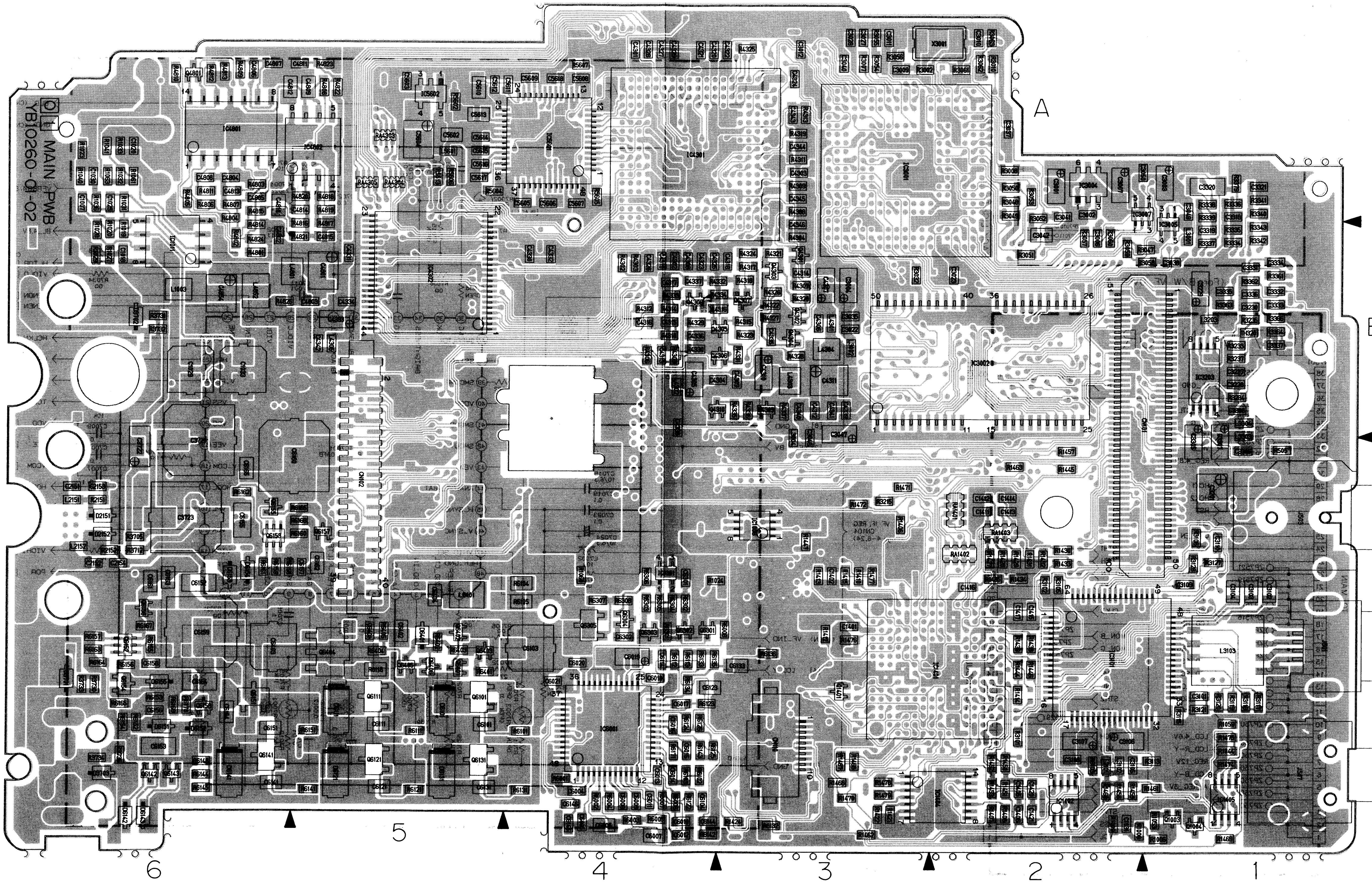
(For MONITOR OVER ALL)



10 B/W VF
CN7001
[1] REG_12V
L7003 22µ
D7003 MA111
C7017 OPEN
C7025 100/16
[8] GND
D_GND
[2] VF_4.8V
TO VF IF, REG CN104 (Page 4-6,24)
(OPEN) VF_IND
[4] LCD_Y
[7] GND
A_GND
R7026 OPEN
R7025 OPEN
C7022 OPEN
R7022 2.2K
C7015 0.1
L7001 10µ
C7018 10/6.3
C7019 0.1
C7023 0.1
C7024 10/6.3
L7002 10µ
R7027 0Ω
R7020 15K
VR7002 22K [BLACK LEVEL]
R7019 15K
C7014 0.01
R7016 56K
C7013 0.01
R7015 OPEN
R7038 OPEN
R7036 0Ω
C7012 1
R7023 OPEN
C7021 0.01
R7014 68
R7013 10k
Q7001 2SD2216J/QR/-X
R7012 22K
D7002 MA111
C7011 0.001
IC7001 PCVVQ110AFB
NC
OK
BRIGHTNESS
VBG
BL
BL_GND
BLACK_LEVEL
VDHC
VIDLC
VIDL
RENO
RENE
SMPFILTER
SSTART
SMCOMP
VDDH
SMGND
SMOUT
VBAT
ANALOG_VBAT
H_SYNC
V_SYNC
VHIO_SEL
REF_GND
HCK
HPL
V_REF
VSS
VDD
VEE
V_COM
HODL
VPL
VCK
VIDH
PDR
SLEEP
OSD_CTL
OSD_IN
A_GND
VIDEO_IN
CLAMP
PLL_FILTER
GAIN
SYFILTER
525/625
D_GND
A_GND
R7001 0Ω
R7006 0Ω
R7002 270
R7037 OPEN
R7018 OPEN
VR7003 OPEN
R7003 180P
R7017 OPEN
R7028 OPEN
R7004 100K
R7039 15K
R7029 15K
C7001 0.1
C7002 0.1
R7005 1.8K
C7003 4.7/6.3
C7004 0.0012
C7005 0.01
C7006 1
R7009 18K
VR7001 22K [GAIN]
R7010 0Ω
R7021 0Ω
R7008 0Ω
R7024 OPEN
R7040 0Ω
BLD (CN7003-2)
GND (CN7002-10)
VFREG4.8 (CN7001-3)
R7007 0Ω
BL_4.8V (CN7003-1)
CN7002
R7033 0Ω
HLTOR [14]
R7034 0Ω
VIDLO [4]
RENON [5]
RENEN [6]
HCLKN [7]
HPLN [8]
C7010 0.1
VREF [9]
R7011 10K
TCL [3]
C7009 0.1
VDD [11]
C7008 0.1
VEE [12]
C7007 0.1
VCOM [13]
HODL [15]
VPLN [16]
VCKN [17]
R7035 0Ω
VIDHI [18]
PDR [19]
TO LCD MODULE

4.20 MAIN CIRCUIT BOARD

FOIL SIDE (B)


MAIN PWB
YB10260-0-02
A
B
C
D
1
2
3
4
5
6

COMPONENT PARTS LOCATION GUIDE (MAIN)

REF.No.	LOCATION		
CAPACITOR			
C501	A	C	1D
C502	A	C	1D
C503	A	C	1D
C504	A	C	1D
C505	A	C	1D
C506	A	C	2D
C1001	A	C	2C
C1002	A	C	2C
C1003	A	C	1C
C1004	A	C	3D
C1005	A	C	1C
C1006	A	C	1C
C1007	B	C	6A
C1008	A	C	4D
C1009	A	C	2D
C1010	A	C	2D
C1011	A	C	3D
C1012	A	C	1D
C1013	A	C	2C
C1014	A	C	4C
C1015	A	C	2C
C1016	A	C	2D
C1017	A	C	3C
C1018	B	C	6B
C1019	A	C	4D
C1020	B	C	6A
C1021	A	C	6B
C1022	A	C	3D
C1023	A	C	3D
C1024	A	C	3D
C1025	B	C	6A
C1026	A	C	3D
C1027	A	C	3D
C1028	A	C	3D
C1029	B	C	6B
C1030	B	C	6A
C1031	B	C	2D
C1032	A	C	4D
C1033	B	C	6B
C1034	A	C	6B
C1035	A	C	2C
C1036	A	C	1D
C1037	A	C	4D
C1038	A	C	3C
C1039	A	C	3C
C1401	B	C	3C
C1402	B	C	3C
C1405	B	C	2D
C1406	B	C	2D
C1407	A	C	2D
C1408	A	C	2D
C1411	B	C	2C
C1412	B	C	2C
C1413	B	C	2C
C1414	B	C	2C
C1415	B	C	2C
C1416	B	C	2C
C1417	B	C	2C
C1418	A	C	2D
C1419	A	C	2D
C1420	B	C	2D
C1421	B	C	2D
C2151	B	C	6C
C2152	B	C	6C
C2153	B	C	6C
C2154	B	C	6C
C3001	B	C	2A
C3002	B	C	2A
C3003	B	C	1A
C3004	B	C	3B
C3005	A	C	2A
C3006	B	C	2B
C3007	B	C	2A
C3009	B	C	3A
C3010	B	C	2A
C3011	B	C	3A
C3012	B	C	3A
C3022	B	C	3B
C3023	B	C	2B
C3027	B	C	3A
C3028	B	C	3A
C3035	B	C	3B
C3037	B	C	2A
C3038	B	C	1B
C3040	B	C	3A
C3041	B	C	2A
C3042	B	C	2B
C3047	B	C	3B
C3048	B	C	3C
C3049	B	C	1A
C3050	B	C	2A
C3101	B	C	1D
C3102	B	C	1C
C3103	B	C	1C
C3104	B	C	1C
C3105	B	C	2D
C3106	B	C	2D
C3107	B	C	2D
C3108	B	C	2D
C3109	B	C	1C
C3110	B	C	1C
C3201	B	C	1C
C3203	A	C	2C
C3204	A	C	2C
C3205	A	C	2C
C3207	A	C	3B
C3208	A	C	2C
C3211	A	C	2A
C3212	A	C	2A
C3213	A	C	2A
C3214	A	C	2C
C3215	A	C	2C
C3217	A	C	2C
C3218	A	C	2A
C3219	A	C	2C
C3220	A	C	3B
C3221	A	C	2A
C3222	A	C	2B
C3223	A	C	3B
C3224	A	C	2B
C3227	B	C	1B
C3228	B	C	1B
C3229	B	C	1B
C3230	B	C	1B
C3231	A	C	1B
C3232	A	C	1C
C3301	A	C	1C
C3302	A	C	1C
C3303	A	C	1C
C3304	A	C	1C
C3305	B	C	1C
C3306	B	C	1C
C3307	B	C	1C
C3308	B	C	1B
C3309	A	C	1B
C3310	A	C	1B
C3311	A	C	2B
C3312	A	C	1C
C3313	A	C	2B
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C7813	A	C	4A
C7814	A	C	4B
C7815	A	C	3B
CONNECTOR			
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CN102	B	C	5B
CN104	A	C	4A
CN105	A	C	3B
CN106	A	C	5A
CN107	A	C	6A
CN108	A	C	4D
CN109	A	C	3A
CN110	B	C	3D
DIODE			
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D502	A	C	1C
D503	A	C	1D
D504	A	C	1D
D505	A	C	1D
D506	A	C	1D
D507	A	C	1C
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D510	A	C	1C
D1001	A	C	2C
D1002	A	C	2D
D1003	A	C	4D
D1004	A	C	5C
D2151	B	C	6C
D2152	B	C	6C
D3701	B	C	6D
D3702	B	C	6B
D3703	B	C	6D
D5501	A	C	4A
D6101	B	C	5D
D6111	B	C	5D
D6121	B	C	5D
D6131	B	C	5D
D6141	B	C	6D
D6142	B	C	6D
D6143	B	C	6D
D6151	B	C	6D
D6152	B	C	6D
D6153	B	C	6C
D6154	B	C	6C
D6155	B	C	6D
D6401	B	C	5C
D7801	A	C	4A
IC			
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IC502	A	C	1D
IC503	A	C	2D
IC1001	A	C	3C
IC1002	A	C	1D
IC1003	A	C	2C
IC1004	A	C	2C
IC1005	A	D	6A
IC1006	A	C	2C
IC1007	A	C	1D
IC1008	B	C	3C
IC1009	A	C	2D
IC1010	A	C	2C
IC1011	B	C	6B
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IC3007	B	C	2A
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IC3703	A	C	5C
IC4301	B	C	4A
IC4302	B	C	5B
IC4801	B	C	6A
IC4802	B	C	5A
IC4851	A	C	6A
IC5501	A	C	5A
IC5601	B	C	4A
IC5602	B	C	5A
IC6001	B	C	4D
IC6301	B	C	4C
IC7801	A	C	3A
IC7802	A	C	3A
IC7803	A	C	4A
IC7804	A	C	4B
COIL			
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L1001	A	C	4D
L1002	A	C	3D
L1003	B	C	6B
L1005	A	C	1C
L1401	A	C	2D
L2151	B	C	6C
L2152	B	C	6C
L3001	B	C	1B
L3002	B	C	3B
L3004	B	C	3C
L3101	B	C	2D
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L3103	B	C	1C
L3202	A	C	1C
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L6141	A	C	6D
L6151	A	C	6D
L6401	B	C	5C
L7801	A	C	3B
TRANSISTOR			
Q501	A	C	1C
Q502	A	C	2D
Q1001	A	C	1C
Q1002	A	C	4C
Q1003	B	C	1D
Q1004	B	C	1D
Q1005	A	D	6A
Q1006	A	C	3C
Q1007	A	C	3C
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Q1401	B	C	3D
Q1402	A	C	2D
Q1403	A	C	2D
Q1404	A	C	2D

REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION		
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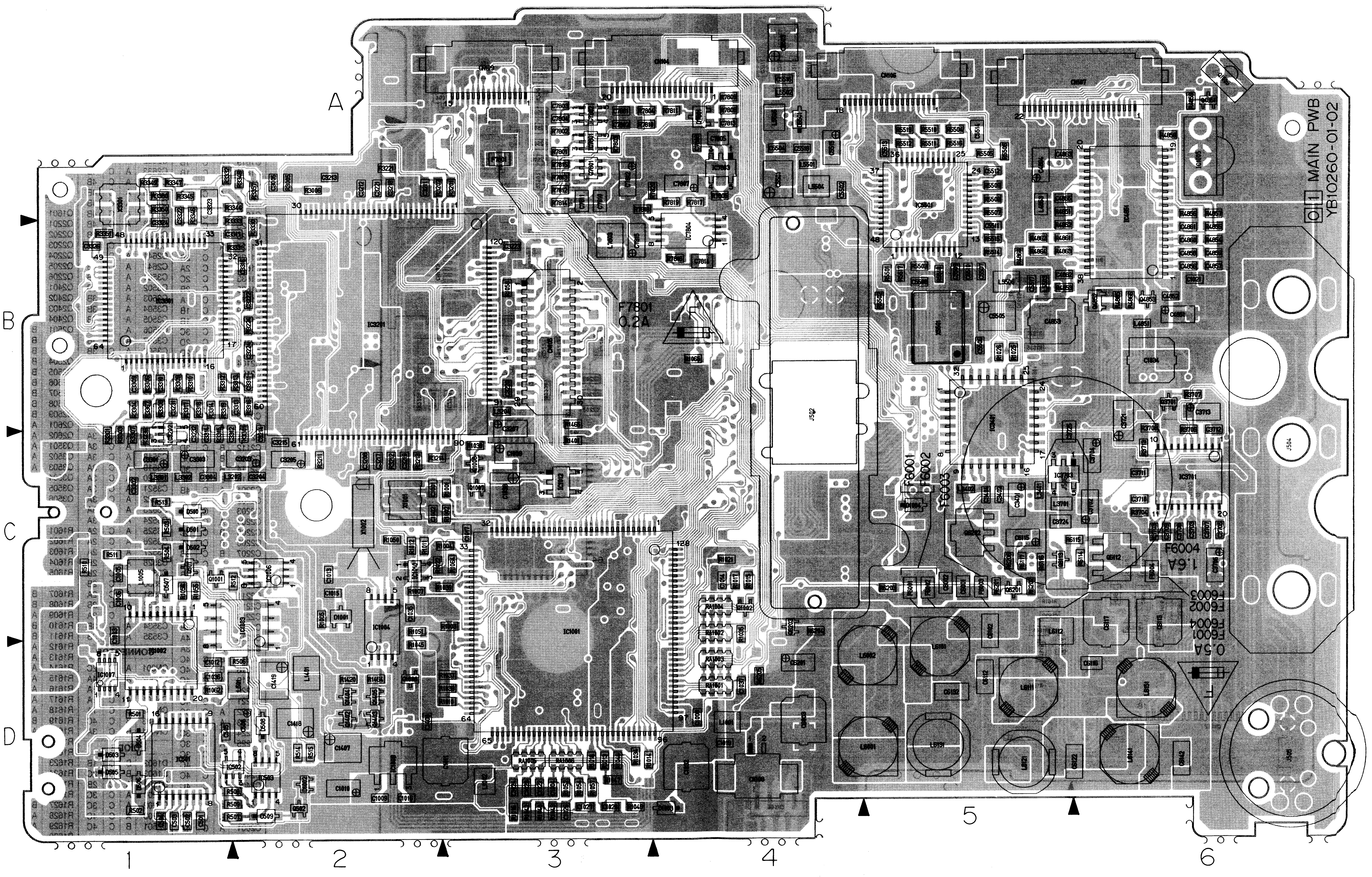
Q3701	A	C	6B	R1013	A	C	3D	R1439	B	C	2C	R3214	A	C	2C	R4308	B	C	3A	R5506	A	C	5A	R6169	B	C	6D
Q4301	B	C	3B	R1014	A	C	3D	R1444	B	C	2D	R3215	B	C	3C	R4309	B	C	3A	R5507	A	C	5A	R6170	B	C	6D
Q4302	B	C	3B	R1015	A	C	4C	R1445	B	C	2C	R3221	A	C	2A	R4310	B	C	4B	R5508	A	C	5A	R6171	B	C	4D
Q4303	B	C	3B	R1016	A	C	3D	R1446	B	C	2D	R3224	A	C	2B	R4311	B	C	3A	R5509	A	C	5A	R6201	A	C	5C
Q4304	B	C	3B	R1017	A	C	4C	R1447	B	C	3C	R3233	B	C	1B	R4312	B	C	4B	R5510	A	C	5A	R6202	A	C	5C
Q4305	B	C	3B	R1018	A	C	3D	R1450	B	C	2D	R3234	B	C	1B	R4313	B	C	3A	R5511	A	C	5A	R6203	A	C	5C
Q4306	B	C	3B	R1019	B	C	6B	R1451	B	C	2D	R3235	B	C	1B	R4314	B	C	4B	R5512	A	C	5A	R6204	A	C	4C
Q4307	B	C	3B	R1020	B	C	6B	R1452	B	C	2D	R3236	A	C	1C	R4315	B	C	3B	R5513	B	C	5A	R6205	A	C	4D
Q4308	B	C	4B	R1021	A	C	4C	R1453	B	C	2D	R3237	B	C	1B	R4316	B	C	3B	R5514	A	C	5B	R6206	A	C	5C
Q4309	B	C	3B	R1022	A	C	2C	R1457	B	C	2C	R3301	A	C	1C	R4317	B	C	3B	R5515	A	C	5B	R6301	B	C	4C
Q4310	B	C	3B	R1023	B	C	6A	R1458	B	C	2D	R3303	A	C	1C	R4318	B	C	3B	R5516	A	C	5A	R6302	B	C	4C
Q4801	B	C	6A	R1024	B	C	3C	R1459	B	C	2D	R3304	A	C	1B	R4319	B	C	3A	R5517	A	C	5B	R6303	B	C	4C
Q4851	A	C	6A	R1025	A	C	5B	R1460	B	C	2D	R3306	A	C	1B	R4320	B	C	3B	R5518	A	C	5B	R6304	B	C	4C
Q4852	A	C	6B	R1026	A	C	5B	R1461	B	C	1D	R3307	A	C	1C	R4321	B	C	3B	R5519	A	C	5A	R6305	B	C	4C
Q4853	A	C	6B	R1027	B	C	6B	R1462	B	C	3D	R3308	A	C	1B	R4322	B	C	3B	R5602	B	C	5A	R6306	B	C	4C
Q6101	B	C	5D	R1028	B	C	6B	R1463	B	C	2C	R3309	A	C	1B	R4323	B	C	3B	R5604	B	C	5A	R6307	B	C	4C
Q6111	B	C	5D	R1029	B	C	6B	R1464	A	C	2D	R3310	A	C	1B	R4324	B	C	3B	R5605	B	C	4A	R6308	B	C	4C
Q6112	A	C	6C	R1030	A	C	3C	R1465	A	C	3B	R3312	A	C	1B	R4325	B	C	3A	R5606	B	C	5A	R6401	B	C	5D
Q6113	A	C	5C	R1031	B	C	6A	R1466	B	C	3D	R3313	A	C	2B	R4326	B	C	3B	R5607	B	C	4A	R6402	B	C	5C
Q6121	B	C	5D	R1032	B	C	6A	R1467	B	C	3D	R3314	A	C	1B	R4327	B	C	3B	R6001	B	C	4D	R6403	B	C	5D
Q6131	B	C	5D	R1033	B	C	6A	R1468	B	C	3D	R3315	A	C	1C	R4328	B	C	3B	R6002	B	C	4D	R6404	B	C	5D
Q6141	B	C	6D	R1034	A	C	3D	R1469	B	C	1D	R3316	A	C	2B	R4329	B	C	4B	R6003	B	C	4D	R6405	B	C	5C
Q6142	B	C	6D	R1035	A	C	4C	R1470	B	C	3D	R3317	A	C	1B	R4330	B	C	4B	R6004	B	C	4D	R7801	A	C	3A
Q6143	B	C	6D	R1036	B	C	6A	R1471	B	C	3C	R3318	A	C	1B	R4331	B	C	3B	R6005	B	C	4D	R7802	A	C	3A
Q6151	B	C	6D	R1037	A	C	3D	R1472	B	C	3C	R3319	A	C	1B	R4332	B	C	3B	R6006	B	C	4D	R7803	A	C	3A
Q6152	B	C	6C	R1038	A	C	3D	R1474	B	C	1D	R3330	A	C	2B	R4333	B	C	4B	R6007	B	C	4D	R7804	A	C	3A
Q6153	B	C	6C	R1039	A	C	3C	R1475	B	C	1D	R3331	A	C	2B	R4334	B	C	3B	R6008	B	C	3C	R7805	A	C	4A
Q6154	B	C	6D	R1040	B	C	6A	R1476	B	C	3C	R3332	A	C	1A	R4335	B	C	3B	R6101	B	C	4D	R7808	A	C	4A
Q6155	B	C	6C	R1041	B	C	6A	R1477	B	C	3C	R3333	A	C	2A	R4336	B	C	3B	R6102	B	C	4D	R7809	A	C	4A
Q6156	B	C	6C	R1042	A	C	3D	R1478	B	C	3D	R3334	B	C	1B	R4337	B	C	3B	R6103	B	C	4D	R7810	A	C	3A
Q6157	B	C	5C	R1043	A	C	3D	R1479	B	C	3D	R3335	B	C	1B	R4801	B	C	6B	R6104	B	C	4C	R7811	A	C	4A
Q6158	B	C	6D	R1044	B	C	1D	R2151	B	C	6C	R3336	B	C	1A	R4802	B	C	6B	R6105	B	C	4C	R7812	A	C	3A
Q6201	A	C	5C	R1045	A	C	2D	R2152	B	C	6C	R3337	B	C	1B	R4803	B	C	6A	R6111	B	C	5D	R7813	A	C	3A
Q6202	A	C	5C	R1046	A	C	3D	R3002	B	C	3A	R3338	B	C	1A	R4804	B	C	6A	R6112	B	C	4D	R7814	A	C	3A
Q6203	A	C	4C	R1047	A	C	3D	R3005	A	C	2A	R3339	B	C	1A	R4805	B	C	6A	R6113	B	C	4D	R7815	A	C	3A
Q6301	B	C	4C	R1048	A	C	3D	R3006	A	C	2A	R3340	B	C	1A	R4806	B	C	6A	R6114	A	C	6C	R7816	A	C	4B
Q6302	B	C	4C	R1049	A	C	3D	R3007	B	C	3A	R3341	B	C	1A	R4807	B	C	6A	R6115	A	C	6C	R7817	A	C	4A
Q6303	B	C	4C	R1050	A	C	2C	R3008	B	C	2A	R3342	B	C	1B	R4808	B	C	5A	R6116	A	C	5C	R7818	A	C	3A
Q6304	B	C	4C	R1051	A	C	2C	R3010	B	C	2A	R3343	B	C	1B	R4809	B	C	6A	R6117	A	C	5C	R7819	A	C	4A
Q6305	B	C	4C	R1052	A	C	3D	R3032	B	C	3B	R3344	A	C	2A	R4810	B	C	6A	R6118	B	C	5D	R7820	A	C	4A
Q6401	B	C	5D	R1053	B	C	1D	R3047	B	C	1B	R3345	A	C	1A	R4811	B	C	6A	R6121	B	C	5D	RA1001	A	C	4D
Q6402	B	C	5C	R1054	A	C	3D	R3048	B	C	2A	R3346	A	C	1A	R4812	B	C	6A	R6122	B	C	4D	RA1002	A	C	4C
Q6403	B	C	5D	R1055	A	C	1C	R3049	B	C	2A	R3347	A	C	1A	R4813	B	C	6A	R6123	B	C	4D	RA1003	A	C	4D
Q6404	B	C	5D	R1056	A	C	1C	R3050	B	C	2A	R3348	A	C	2A	R4814	B	C	6B	R6124	B	C	4D	RA1004	A	C	4C
Q6405	B	C	5D	R1057	A	C	3D	R3051	B	C	2B	R3349	A	C	1A	R4815	B	C	6A	R6125	B	C	4D	RA1005	A	C	3D
Q6406	B	C	5D	R1058	A	C	3B	R3052	B	C	2A	R3350	A	C	1A	R4816	B	C	5B	R6126	B	C	4D	RA1006	A	C	3D
Q7801	A	C	3A	R1059	B	C	1D	R3053	B	C	2A	R3351	A	C	1B	R4817	B	C	5B	R6131	B	C	4D	RA1401	B	C	2C
RESISTOR				R1060	B	C	4C	R3054	B	C	3A	R3357	A	C	2A	R4818	B	C	5A	R6132	B	C	3D	RA1402	B	C	2C
				R1061	B	C	6A	R3055	B	C	3A	R3361	B	C	1B	R4819	B	C	5A	R6133	B	C	4D	RA1403	B	C	2C
R501	A	C	1D	R1062	A	C	1D	R3056	B	C	3A	R3362	B	C	1B	R4820	B	C	5A	R6134	B	C	4D	RA4303	B	C	5A
R502	A	C	1D	R1063	B	C	6A	R3057	B	C	2B	R3363	B	C	1B	R4821	B	C	5B	R6135	B	C	4D	RA4304	B	C	5A
R503	A	C	1C	R1064	A	C	3C	R3058	B	C	1B	R3364	B	C	1B	R4822	B	C	5A	R6136	B	C	3D	RA4305	B	C	5A
R504	A	C	1C	R1065	A	C	4B	R3059	B	C	2B	R3366	B	C	1B	R4823	B	C	5A	R6141	B	C	5D	**OTHER**			
R505	B	C	1C	R1401	A	C	3C	R3060	B	C	2B	R3367	A	C	1B	R4824	B	C	6B	R6142	B	C	4D				
R506	A	C	2D	R1406	B	C	3C	R3061	B	C	2A	R3379	B	C	1A	R4825	B	C	6B	R6143	B	C	4D	F6001	A	C	5C
R507	A	C	1D	R1407	B	C	2D	R3062	B	C	2A	R3380	A	C	1A	R4851	A	C	5A	R6144	B	C	6D	F6002	A	C	5C
R508	A	C	1D	R1408	B	C	2D	R3063	B	C	2A	R3703	A	C	6C	R4852	A	C	5B	R6145	B	C	6D	F6003	A	C	5C
R509	A	C	1D	R1410	B	C	3C	R3101	B	C	2D	R3704	A	C	6C	R4853	A	C	5B	R6146	B	C	6D	F6004	A	C	6C
R510	A	C	1C	R1412	B	C	3C	R3102	B	C	2C	R3705	B	C	6C	R4854	A	C	6B	R6151	B	C	5D	F7801	A	C	3A
R511	A	C	1C	R1413	B	C	3C	R3103	B	C	2D	R3706	A	C	6C	R4855	A	C	6B	R6152	B	C	6D	J501	B	C	1C
R512	A	C	2C	R1414	B	C	2D	R3105	B	C	2C	R3707	A	C	6B	R4856	A	C	6A	R6153	B	C	6D	J502	A	D	4B
R513	A	C	1C	R1415	B	C	3C	R3106	B	C	1C	R3708	A	C	6C	R4857	A	C	6A	R6154	B	C	6D	J503	A	D	1C
R514	A	C	2D	R1420	A	C	2D	R3113	B	C	1D	R3712	B	C	6C	R4858	A	C	6A	R6155	B	C	6C	J504	A	D	6C
R515	A	C	2D	R1421	B	C	3D	R3115	B	C	1D	R3713	A	C	6C	R4859	A	C	6A	R6156	B	C	6D	J505	A	D	6D
R1001	A	C	3C	R1422	B	C	3D	R3117	B	C	1D	R3730	B	C	6D	R4860	A	C	5B	R6157	B	C	6C	J506	A	D	5C
R1002	A	C	3C	R1424	B	C	3D	R3118	B	C	1D	R3731	B	C	6B	R4861	A	C	5B	R6158	B	C	5C	J507	A	D	1D
R1003	A	C	3C	R1427	B	C	2C	R3119	B	C	1D	R3732	B	C	6B	R4862	A	C	5B	R6159	B	C	6C	TH3201	B	C	1B
R1004	A	C	3C	R1428	B	C	2C	R3120	B	C	1D	R3733	B	C	6D	R4863	A	C	5B	R6160	B	C	5C	TH3301	A	C	2C
R1005	A	C	2C	R1429	B	C	2C	R3121	B	C	1D	R3734	B	C	6D	R4864	A	C	5B	R6161	B	C	6C	X1001	A	C	2C
R1006	B	C	1D	R1430	B	C	2C	R3127	B	C	1C	R3735	B	C	6D	R4865	A	C	6B	R6162	B	C	6C	X1002	A	C	2C
R1007	A	C	2C	R1431	B	C	2C	R3128	B	C	1C	R4302	B	C	4B	R4866	A	C	6B	R6163	B	C	6D	X3001	B	C	2A
R1008	B	C	2D	R1432	B	C	2C	R3201	A	C	3A	R4303	B	C	4B	R5501	A	C	5B	R6164	B	C	6D	X3301	A	C	1A
R1009	B	C	2D	R1433	B	C	2C	R3202	A	C	2A	R4304	B	C	3B	R5502	A	C	5B	R6165	B	C	6D	X5501	A	C	5B
R1010	A	C	3D	R1434	B	C	2C	R3211	A	C	2C	R4305	B	C	4B	R5503	A	C	5B	R6166	B	C	5C				
R1011	A	C	2C	R1435	B	C	2C	R3212	A	C	2C	R4306	B	C	4B	R5504	A	C	5A	R6167	B	C	6C				

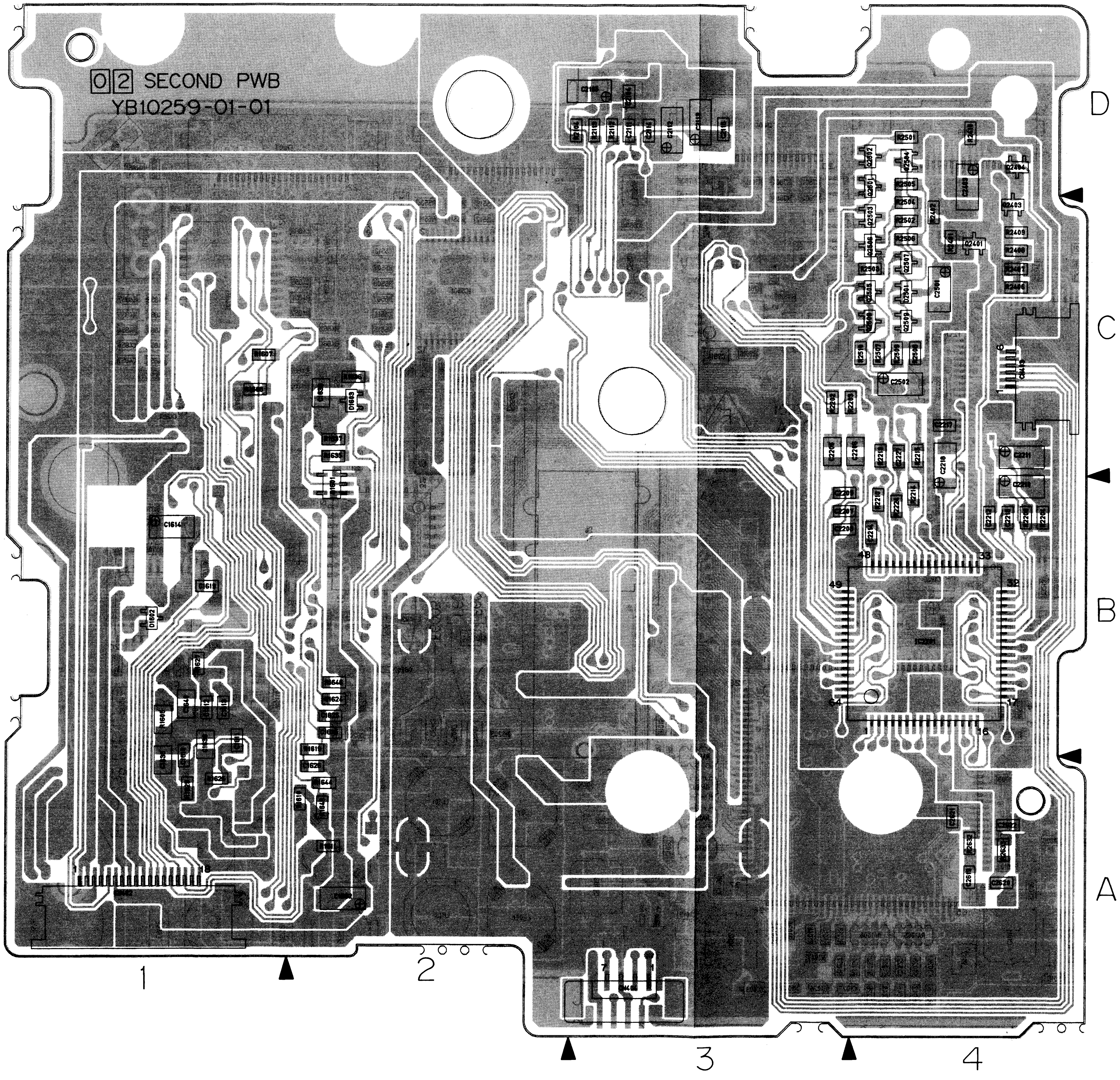
COMPONENT SIDE (A)



A
B
C
D
1
2
3
4
5
6
MAIN PWB
YB10260-01-02
F7801
0.2A
F6001
F6002
F6003
F6004
1.6A
0.5A
IC1001
IC3201
J502
J504
J505

4.21 SECOND CIRCUIT BOARD

FOIL SIDE (B)



COMPONENT PARTS LOCATION GUIDE (SECOND)

REF.No.	LOCATION		
CAPACITOR			
C1601	A	C	1A
C1602	A	C	2A
C1603	A	C	2A
C1605	A	C	2A
C1606	A	C	1A
C1607	A	C	1C
C1610	B	C	1B
C1611	B	C	1B
C1612	B	C	1B
C1613	B	C	1B
C1614	B	C	1B
C1615	A	C	1C
C1616	A	C	1C
C1617	A	C	1C
C1618	A	C	1B
C1619	B	C	1B
C1620	A	C	1B
C1621	A	C	1C
C1622	A	C	1B
C1623	A	C	1B
C1624	B	C	2B
C1625	B	C	2B
C1626	B	C	2A
C1627	A	C	1A
C1628	A	C	2B
C1632	B	C	2A
C1633	B	C	2C
C1635	B	C	2B
C1638	B	C	1A
C1639	B	C	1B
C1640	B	C	1B
C2101	A	C	3C
C2102	A	C	2D
C2103	A	C	2D
C2104	B	C	3D
C2105	B	C	3D
C2106	A	C	3D
C2107	A	C	3D
C2108	A	C	3D
C2109	A	C	3D
C2110	A	C	3D
C2111	B	C	3D
C2112	B	C	3D
C2113	B	C	3D
C2114	B	C	3D
C2115	B	C	3D
C2201	A	C	4B
C2202	A	C	4B
C2203	A	C	4B
C2204	A	C	4B
C2205	B	C	3C
C2206	B	C	4C
C2207	B	C	3B
C2208	B	C	3B
C2209	B	C	3B
C2210	B	C	4B
C2211	B	C	4C
C2212	B	C	4B
C2213	B	C	4B
C2214	B	C	4B
C2215	A	C	4A
C2216	A	C	3A
C2217	B	C	4C
C2218	B	C	4C
C2219	A	C	4C
C2220	A	C	4C
C2221	A	C	4C
C2222	A	C	3C
C2223	A	C	4C
C2224	A	C	3C
C2225	A	C	3C
C2226	A	C	3C
C2227	B	C	4C
C2401	A	C	4C
C2402	A	C	4C
C2403	B	C	4D
C2501	B	C	4C
C2502	B	C	4C
C2601	A	C	4A
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C2639	A	C	4B
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C3527	A	C	2A
C3528	A	C	2B
C3529	A	C	2B
C3530	A	C	2B
C3531	A	C	2A
C3532	A	C	2B
C3533	A	C	2A
C3534	A	C	3B
C3535	A	C	2B
CONNECTOR			
CN301	A	C	2C
CN302	A	C	4A
CN304	A	C	3A
CN401	A	C	2A
CN402	B	C	1A
CN403	B	C	4C
CN404	B	C	3A
DIODE			
D1602	B	C	1B
D1603	B	C	2C
D1604	A	C	2B
D2201	A	C	3C
D2202	A	C	3C
D2203	A	C	4C
D2501	B	C	4C
IC			
IC1601	A	C	1B
IC2101	A	C	3D
IC2201	B	C	4B
IC3501	A	C	3B
COIL			
L1601	A	C	2C
L1602	A	C	2B
L2101	A	C	3C
L2201	A	C	3A
L2202	A	C	3A
L2601	A	C	4A
L2602	A	C	4A
L2603	A	C	4A
L3501	A	C	3B
L3502	A	C	3A
L3503	A	C	3A
L3504	A	C	3A
L3505	A	C	2C
L3506	A	C	2B
L3507	A	C	2C
TRANSISTOR			
Q1601	B	C	2B
Q2201	A	C	3C
Q2202	A	C	4C
Q2203	A	C	4C
Q2204	A	C	3C
Q2205	A	C	3C
Q2206	A	C	3C
Q2401	B	C	4C
Q2402	A	C	4C
Q2403	B	C	4C
Q2404	B	C	4D
Q2501	B	C	4D
Q2502	B	C	4D
Q2503	B	C	4C
Q2504	B	C	4D
Q2505	B	C	4C
Q2506	B	C	4C
Q2507	B	C	4C
Q2508	B	C	4C
Q2509	B	C	4C
Q2601	A	C	4B
Q2602	A	C	4B
Q3501	A	C	3A
Q3502	A	C	3A
Q3503	A	C	3A
Q3504	A	C	2A
Q3505	A	C	2B
Q3506	A	C	2B
RESISTOR			
R1601	A	C	2A
R1602	A	C	2B
R1603	A	C	2A
R1604	A	C	1B
R1605	B	C	1B
R1606	A	C	2C
R1607	B	C	1C
R1608	B	C	1C
R1609	A	C	1C
R1610	B	C	2A
R1611	B	C	2A
R1612	A	C	1B
R1613	A	C	1C
R1614	A	C	2B
R1615	A	C	2B
R1616	A	C	2B
R1617	A	C	2B
R1618	A	C	2B
R1619	B	C	2B
R1620	A	C	1C
R1621	A	C	2B
R1622	A	C	1C
R1623	A	C	1C
R1624	A	C	1A
R1625	B	C	1A
R1626	B	C	1A
R1627	B	C	1B
R1628	A	C	1A
R1629	A	C	2A
R1630	A	C	1C
R1631	A	C	2C
R1632	A	C	2C
R1633	A	C	1C

REF.No.	LOCATION			REF.No.	LOCATION		
R1634	A	C	1C	R2627	A	C	4B
R1635	B	C	2C	R2628	A	C	4B
R1636	B	C	2C	R2629	A	C	4B
R1637	B	C	2C	R2630	A	C	4B
R1638	A	C	2B	R2631	A	C	4B
R1639	A	C	2B	R2632	B	C	4A
R1640	A	C	2B	R2633	B	C	4A
R1641	A	C	2B	R3502	A	C	3B
R1642	A	C	1A	R3504	A	C	3B
R1643	A	C	2A	R3506	A	C	3B
R1644	B	C	2A	R3507	A	C	3B
R1645	B	C	2A	R3508	A	C	3B
R1646	B	C	2B	R3509	A	C	3B
R2101	A	C	2D	R3510	A	C	3B
R2102	A	C	2D	R3511	A	C	3A
R2103	A	C	2D	R3512	A	C	3A
R2104	B	C	3D	R3513	A	C	3A
R2105	A	C	2D	R3514	A	C	3A
R2108	A	C	3D	R3515	A	C	3A
R2109	A	C	3C	R3516	A	C	3A
R2112	B	C	3D	R3517	A	C	3A
R2113	B	C	3D	R3518	A	C	2B
R2114	A	C	2D	R3519	A	C	2B
R2202	B	C	3C	R3520	A	C	2B
R2203	B	C	4C	R3521	A	C	2B
R2204	B	C	4B	R3522	A	C	2A
R2205	B	C	4B	R3523	A	C	2B
R2206	A	C	3C	R3524	A	C	2B
R2207	A	C	3C	R3530	A	C	2B
R2208	A	C	3C				
R2209	A	C	3C				
R2210	B	C	4B				
R2212	A	C	4A				
R2213	B	C	4C				
R2214	B	C	4B				
R2215	B	C	4C				
R2216	A	C	3A				
R2217	A	C	3C				
R2218	A	C	3C				
R2219	A	C	3C				
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R2221	A	C	3C				
R2222	A	C	3C				
R2223	A	C	3C				
R2224	B	C	4B				
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R2402	B	C	4C				
R2403	A	C	4C				
R2404	A	C	4C				
R2405	A	C	4C				
R2406	B	C	4C				
R2407	B	C	4C				
R2408	B	C	4C				
R2409	B	C	4C				
R2410	B	C	4D				
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R2504	B	C	4C				
R2505	B	C	4D				
R2506	B	C	4C				
R2507	B	C	4C				
R2508	B	C	4C				
R2509	B	C	4C				
R2510	B	C	4C				
R2601	A	C	4A				
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R2606	A	C	4B				
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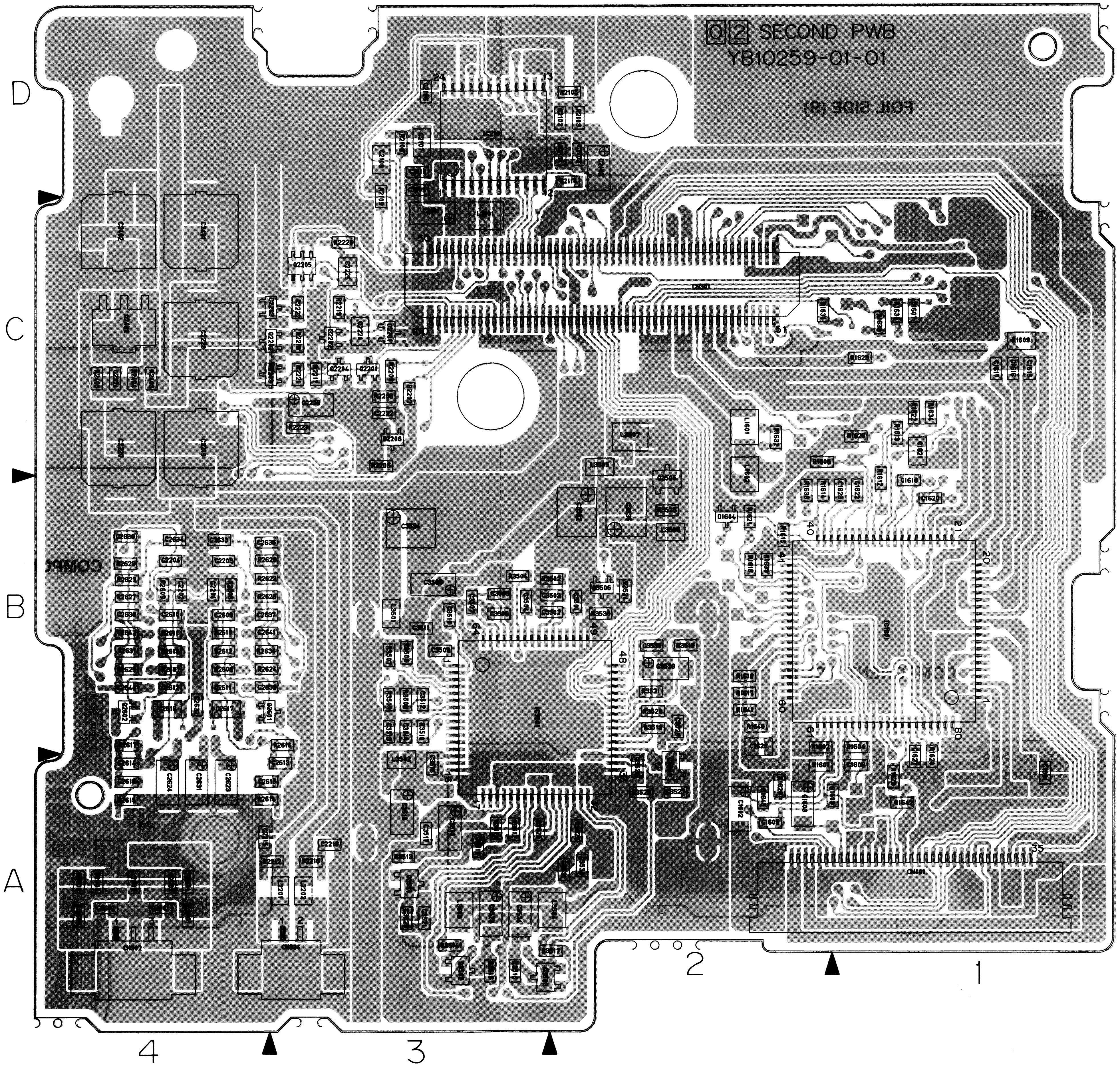
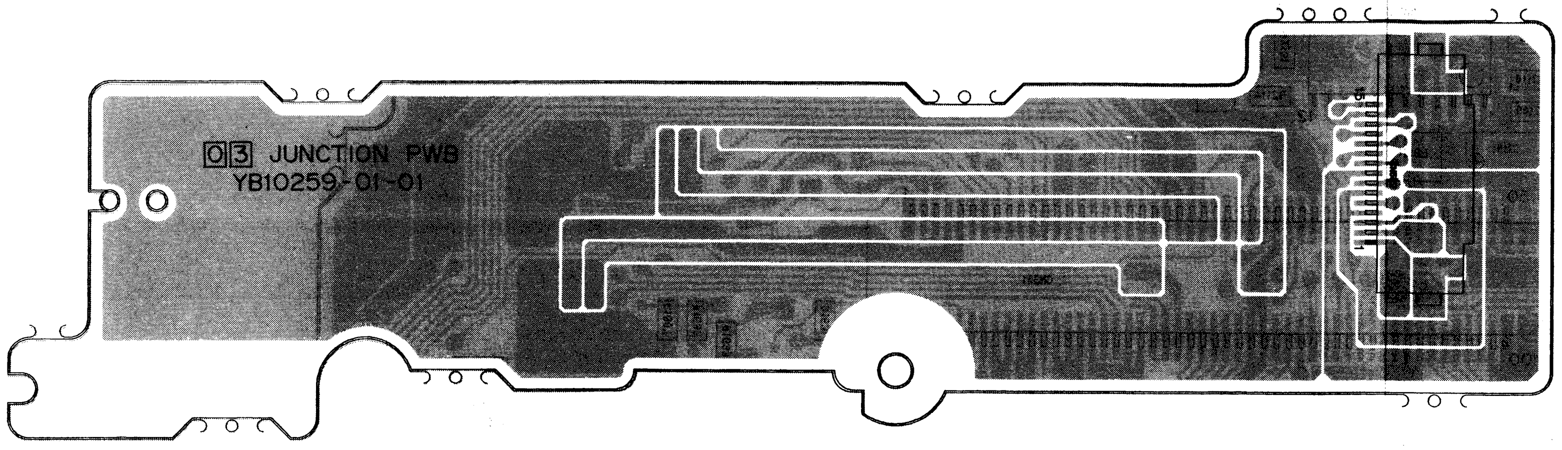
R2615	A	C	4A				
R2616	A	C	3B				
R2617	A	C	4B				
R2622	A	C	4B				
R2623	A	C	4B				
R2624	A	C	4B				
R2625	A	C	4B				
R2626	A	C	4B				

COMPONENT SIDE (A)



4.22 JUNCTION AND CCD CIRCUIT BOARDS

FOIL SIDE (B)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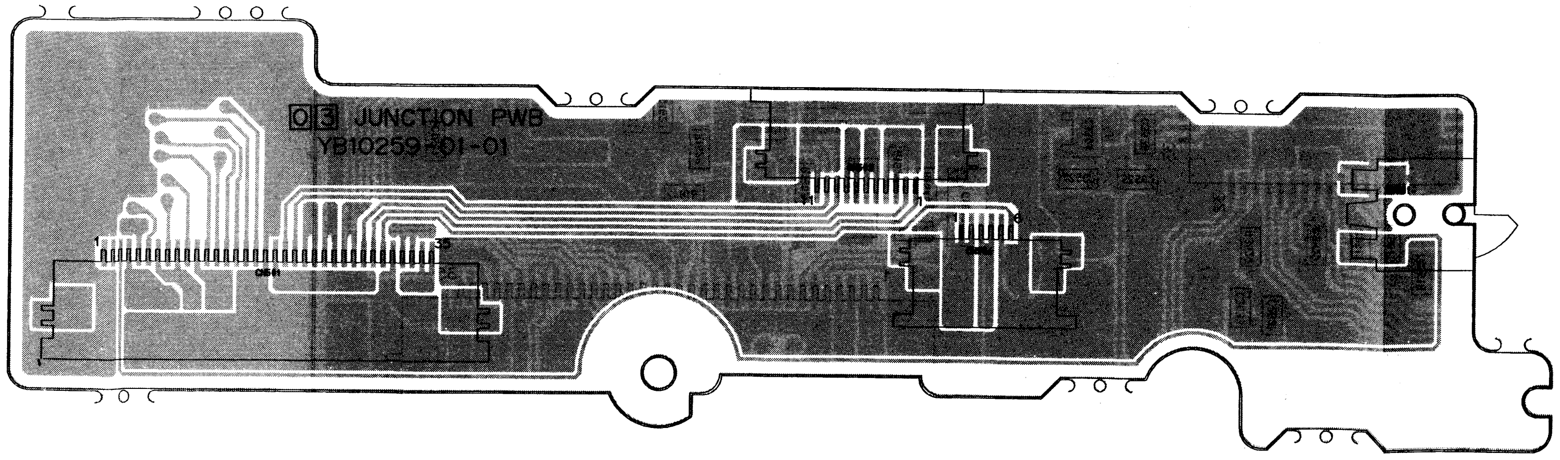
YB10259-01-01

COMPONENT SIDE (A)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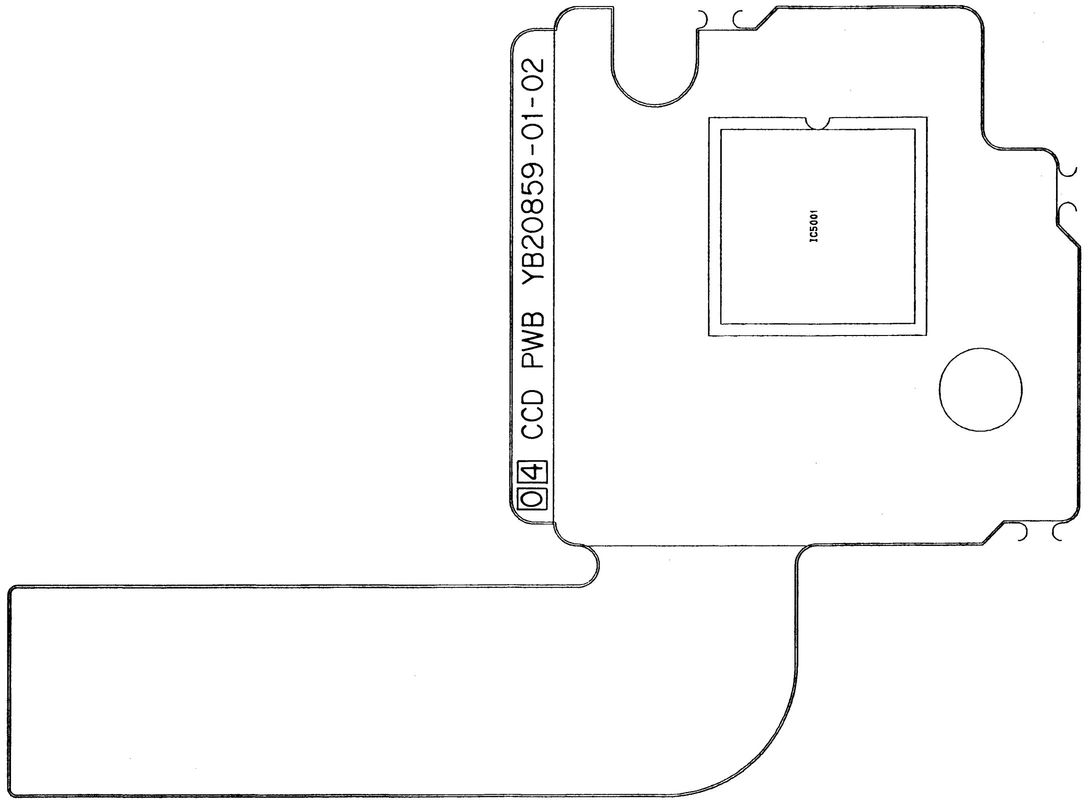
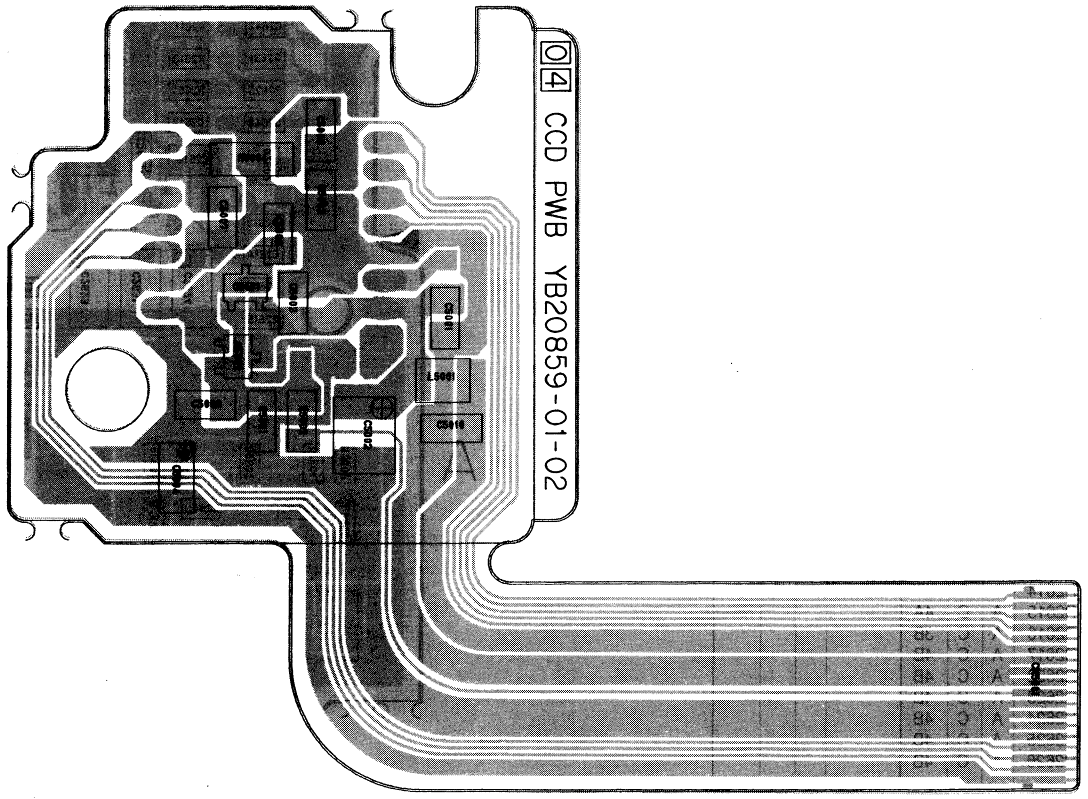
FOIL SIDE (B)


04 CCD PWB YB20859-01-02
IC5001

COMPONENT SIDE (A)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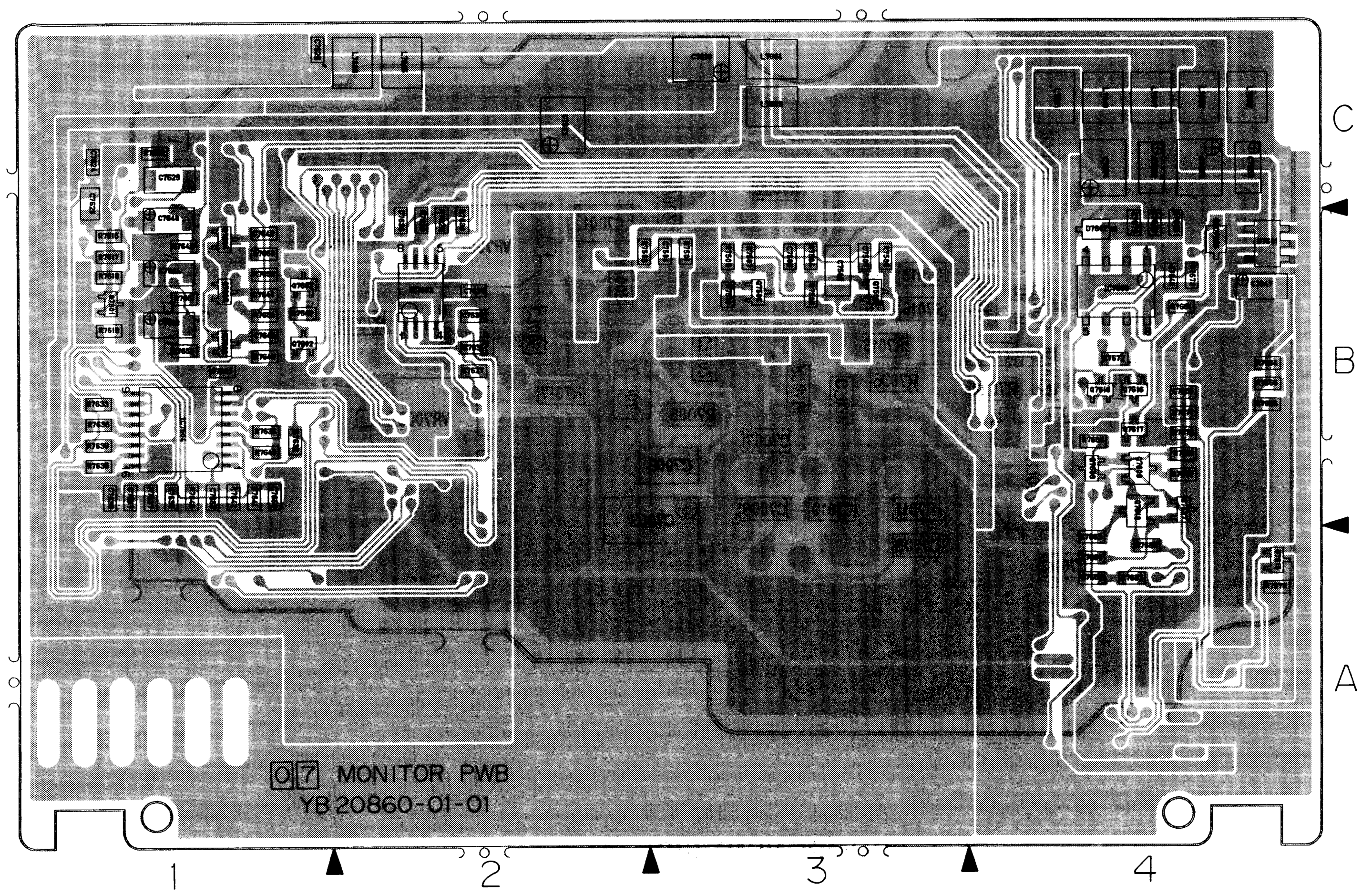
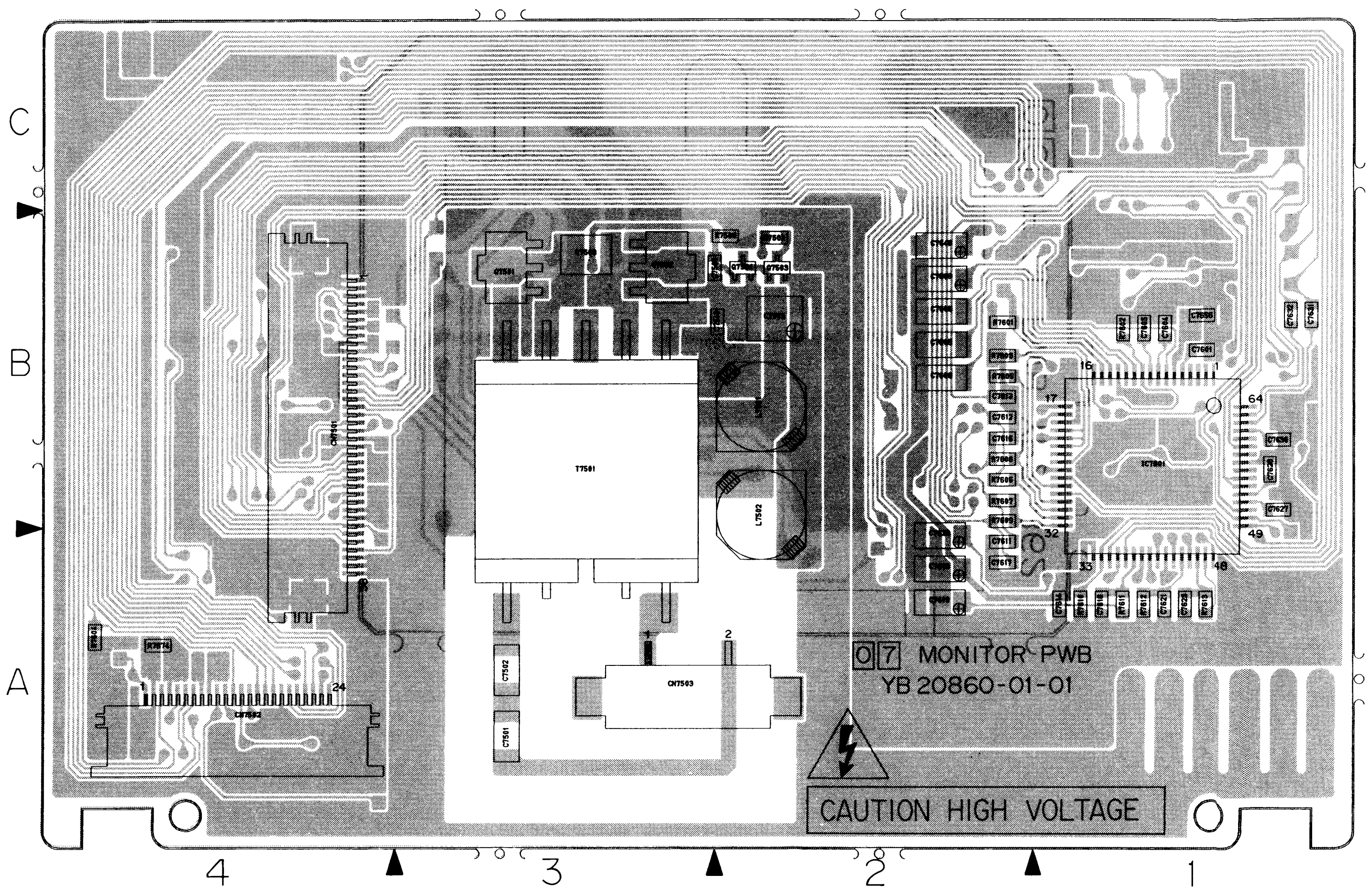
4.23 MONITOR CIRCUIT BOARD

FOIL SIDE (B)



COMPONENT SIDE (A)

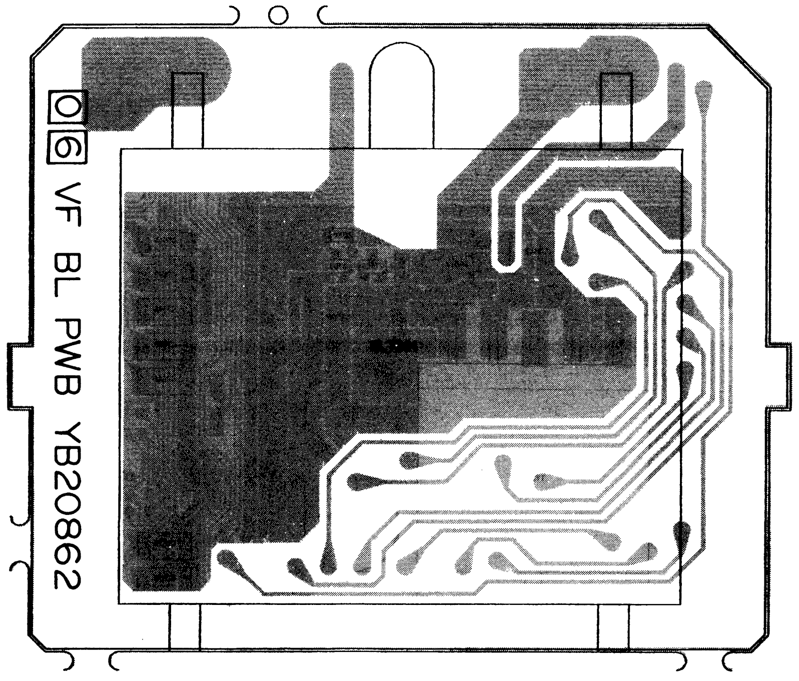


COMPONENT PARTS LOCATION GUIDE (MONITOR)

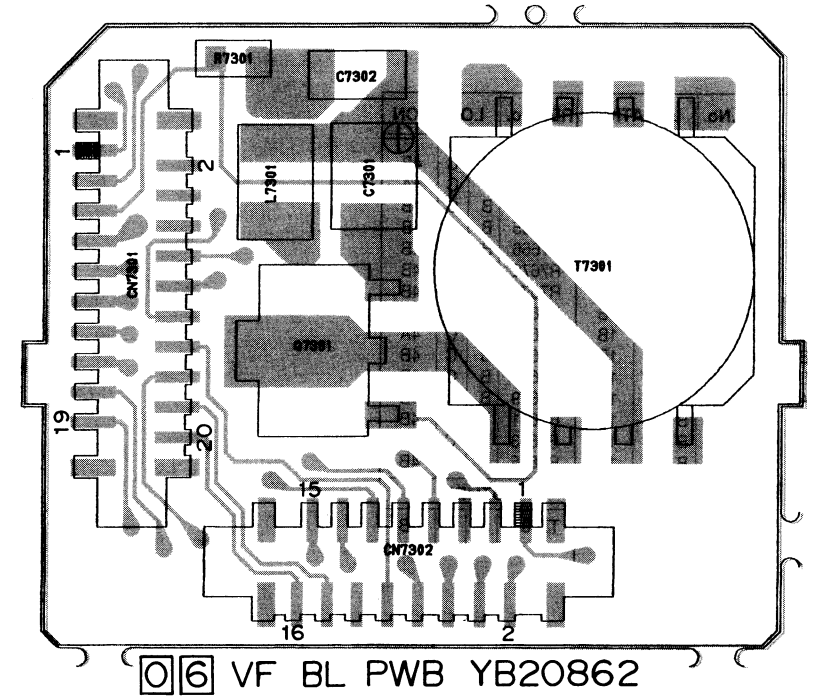
REF.No.	LOCATION		
CAPACITOR			
C7501	A	C	3A
C7502	A	C	3A
C7503	A	C	3B
C7504	B	C	3B
C7505	A	C	2B
C7506	B	C	3B
C7507	B	C	3B
C7508	B	C	3B
C7509	A	C	3B
C7510	A	C	2B
C7601	A	C	1B
C7602	B	C	2C
C7603	A	C	2B
C7604	A	C	1B
C7605	A	C	1B
C7606	A	C	2B
C7607	B	C	1B
C7608	A	C	2B
C7609	A	C	2B
C7610	B	C	3C
C7611	A	C	2A
C7612	A	C	2B
C7613	A	C	2B
C7614	A	C	1A
C7615	A	C	2A
C7616	A	C	2B
C7617	A	C	2A
C7618	A	C	1A
C7619	A	C	2A
C7620	A	C	2A
C7621	A	C	1A
C7623	A	C	1A
C7624	B	C	1C
C7625	B	C	1C
C7626	B	C	1C
C7627	A	C	1B
C7628	A	C	1B
C7629	B	C	1C
C7630	A	C	1B
C7631	A	C	1B
C7632	A	C	1B
C7636	B	C	2B
C7637	B	C	2B
C7638	B	C	2B
C7639	B	C	1B
C7640	B	C	1B
C7641	B	C	1B
C7642	B	C	1B
C7643	B	C	1B
C7644	B	C	1B
C7645	B	C	1B
C7646	A	C	2B
C7647	B	C	4B
C7648	B	C	4B
C7649	B	C	4B
C7650	B	C	4C
C7652	B	C	4C
C7653	B	C	4C
C7654	B	C	4C
C7655	B	C	4B
C7656	A	C	1B
C7657	B	C	1B
C7658	B	C	1B
C7659	B	C	1B
CONNECTOR			
CN7501	A	C	4B
CN7502	A	C	4A
CN7503	A	C	3A
DIODE			
D7601	B	C	4B
D7602	B	C	4B
D7603	B	C	4B
IC			
IC7601	A	C	1B
IC7603	B	C	2B
IC7604	B	C	1B
IC7605	B	C	4B
COIL			
L7501	A	C	2B
L7502	A	C	2B
L7603	B	C	3C
L7604	B	C	3C
L7605	B	C	2C
L7606	B	C	2C
L7607	B	C	4C
L7608	B	C	4C
L7609	B	C	4C
L7610	B	C	4C
L7611	B	C	4C
TRANSISTOR			
Q7501	A	C	3B
Q7502	A	C	3B
Q7503	A	C	2B
Q7504	A	C	2B
Q7505	B	C	3B
Q7506	B	C	3B
Q7601	B	C	1B
Q7602	B	C	1B
Q7603	B	C	1B
Q7604	B	C	1B
Q7605	B	C	1B
Q7606	B	C	1B
Q7607	B	C	4B
Q7608	B	C	4B
Q7609	B	C	4B
Q7610	B	C	4B
Q7615	B	C	4A
Q7616	B	C	4B
Q7617	B	C	4B
Q7618	B	C	4B
RESISTOR			
R7501	B	C	3B
R7502	A	C	2B
R7503	B	C	2B
R7504	B	C	3B
R7505	B	C	3B
R7506	A	C	2B
R7507	B	C	3B
R7508	B	C	3B
R7509	B	C	3B
R7510	B	C	3B
R7601	A	C	2B
R7602	A	C	1B
R7603	A	C	2B
R7604	A	C	4A
R7605	A	C	2B
R7606	A	C	2B
R7607	A	C	2B
R7608	A	C	2B
R7609	A	C	2B
R7610	A	C	1A
R7611	A	C	1A
R7612	A	C	1A
R7613	A	C	1A
R7616	B	C	1B
R7617	B	C	1B
R7618	B	C	1B
R7619	B	C	1B
R7620	B	C	1C
R7627	B	C	2B
R7628	B	C	2B
R7629	B	C	2B
R7630	B	C	2B
R7631	B	C	2B
R7632	B	C	1B
R7633	B	C	1B
R7634	B	C	1B
R7635	B	C	1B
R7636	B	C	1B
R7637	B	C	1B
R7638	B	C	1B
R7639	B	C	1B
R7640	B	C	1B
R7641	B	C	1B
R7642	B	C	1B
R7643	B	C	1B
R7645	B	C	1B
R7646	B	C	1B
R7649	B	C	1B
R7650	B	C	1B
R7651	B	C	1B
R7652	B	C	1B
R7653	B	C	1B
R7654	B	C	1B
R7656	B	C	4B
R7657	B	C	4A
R7659	B	C	4A
R7660	B	C	4A
R7661	B	C	4B
R7662	B	C	4B
R7663	B	C	4A
R7664	B	C	4B
R7665	B	C	4B
R7666	B	C	4B
R7672	B	C	4B
R7673	B	C	4B
R7674	A	C	4A
R7675	B	C	4A
R7677	B	C	4B
R7678	B	C	4B
R7679	B	C	4B
R7681	B	C	4B
R7683	B	C	4A
R7685	B	C	4B
OTHER			
T7501	A	C	3B

4.24 VF BL AND B/W VF CIRCUIT BOARDS

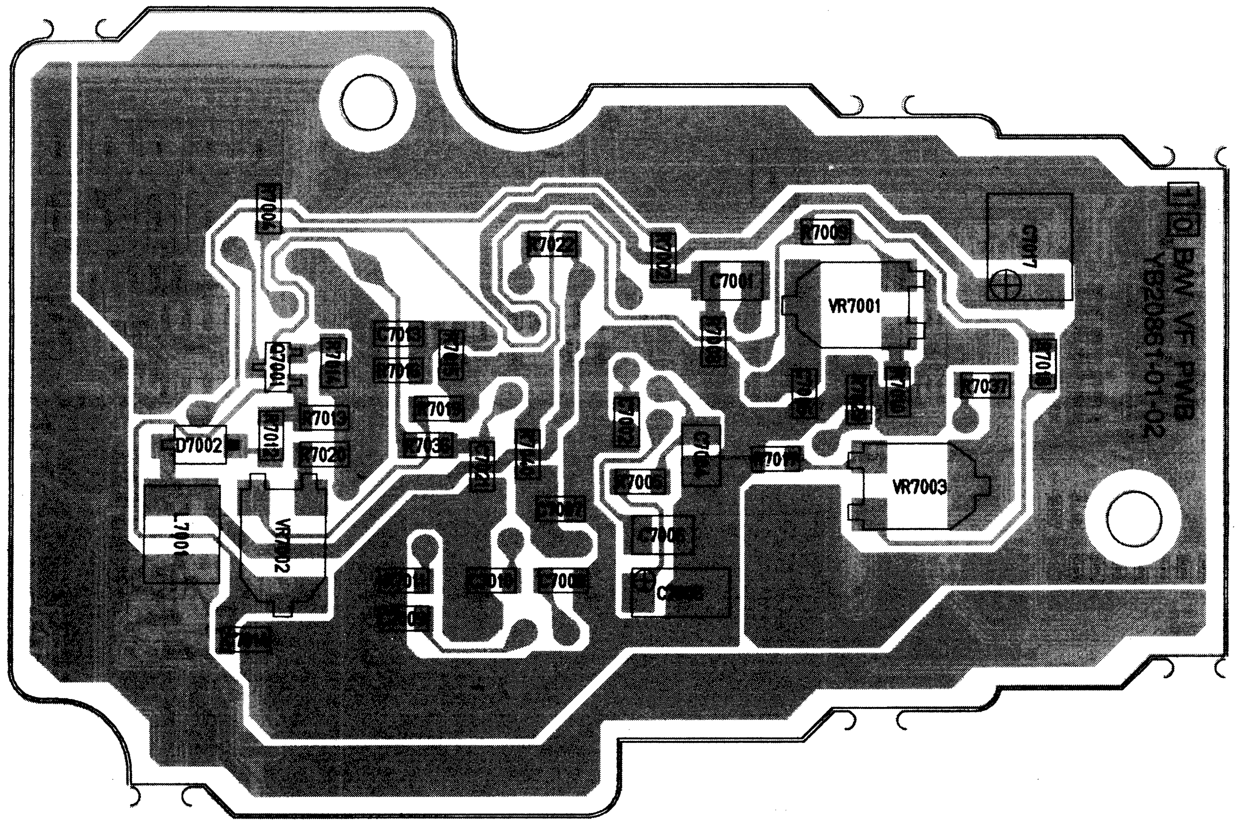
FOIL SIDE (B)


06 VF BL PWB YB20862

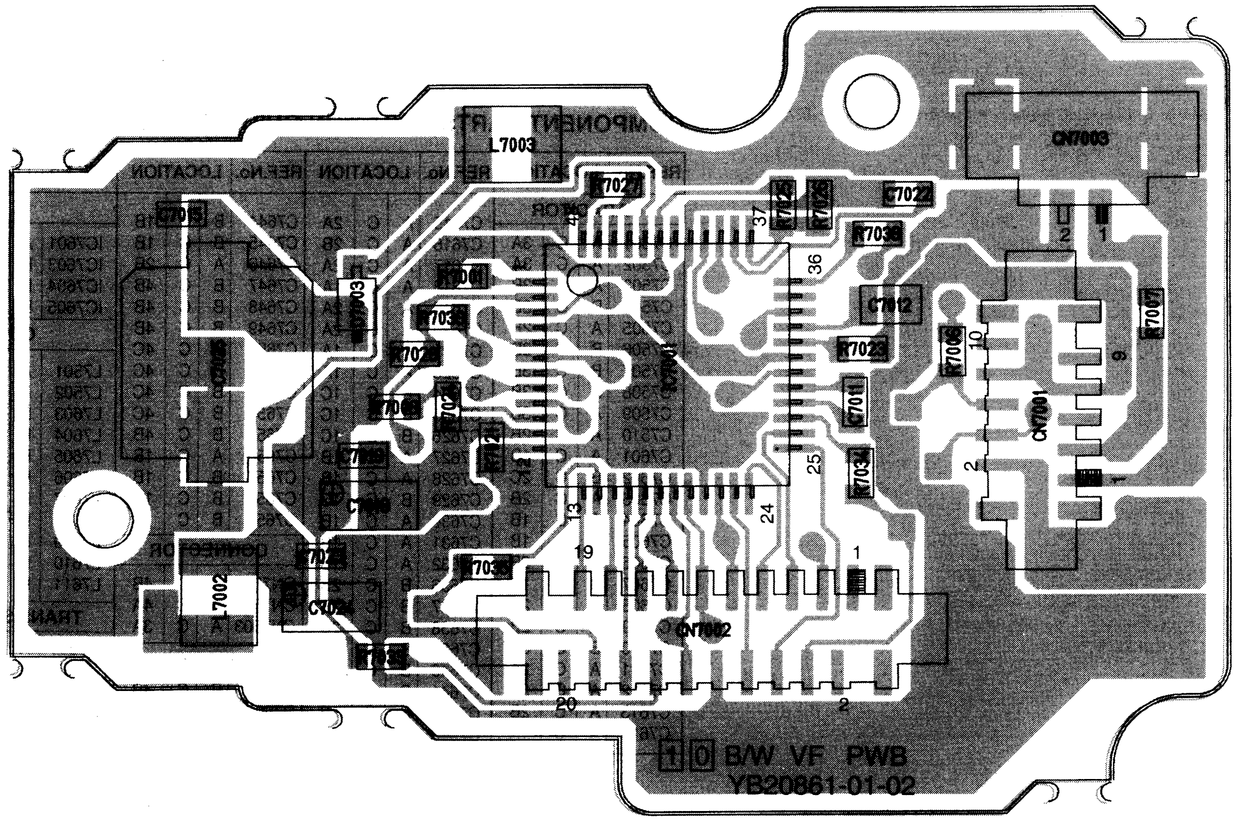
COMPONENT SIDE (A)


R7301
C7302
L7301
C7301
T7301
Q7301
CN7301
CN7302
1
2
19
20
15
16
1
2
06 VF BL PWB YB20862

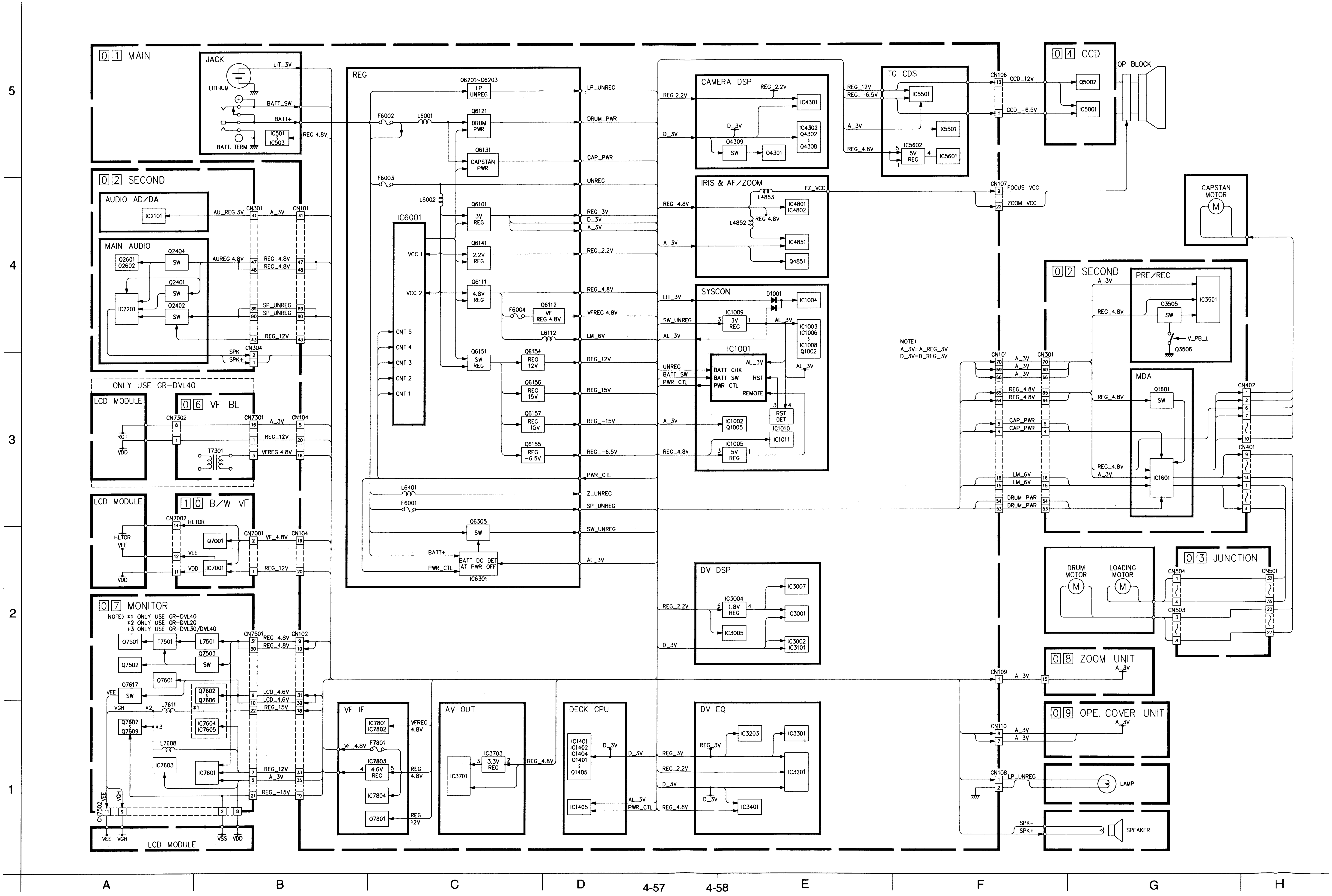
FOIL SIDE (B)


10 B/W VF PWB
YB20861-01-02
R7022
C7001
R7008
VR7001
VR7003
D7002
L7001
VR7002

COMPONENT SIDE (A)

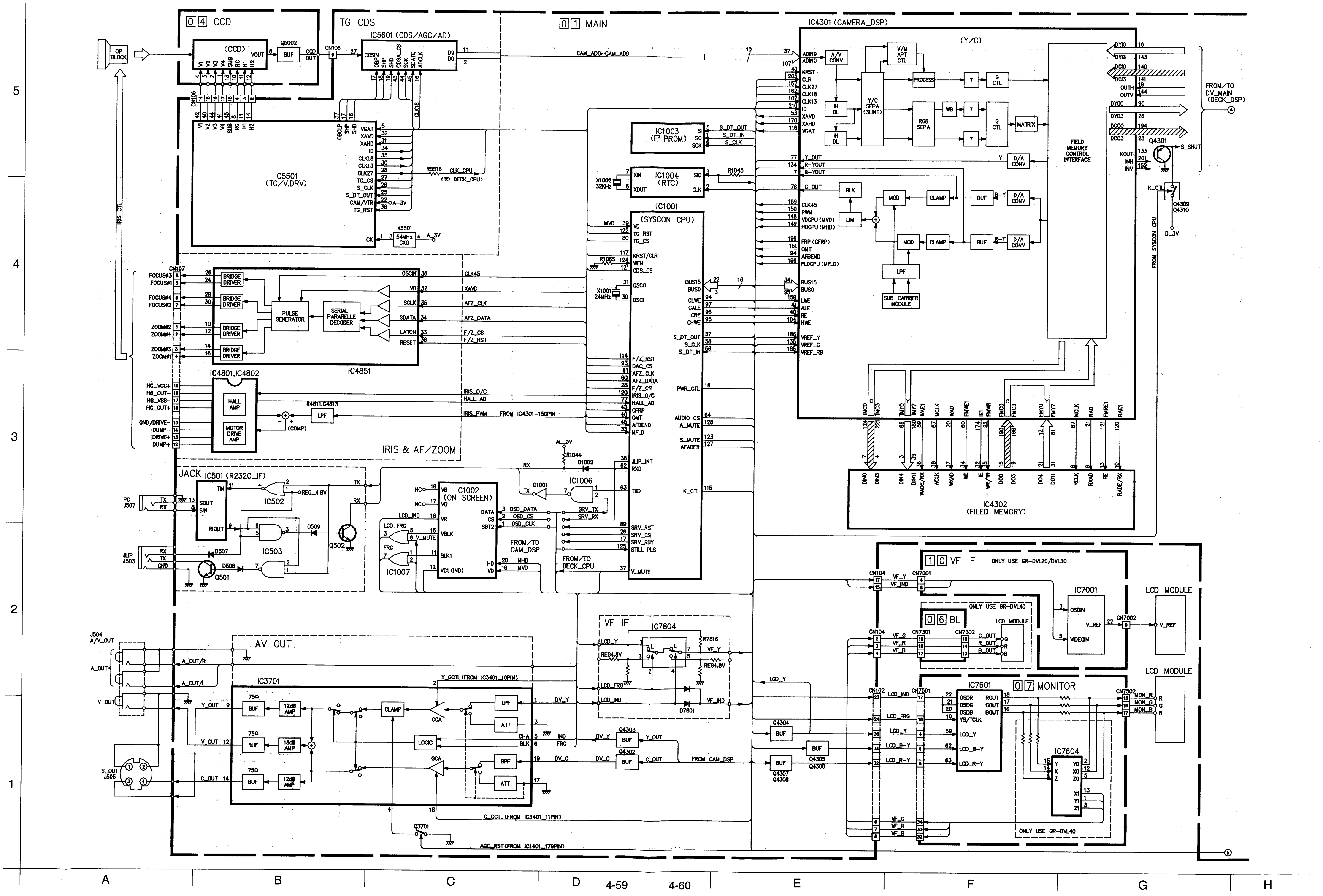

L7003
CN7003
R7027
C7022
R7039
C7012
R7023
C7011
R7034
CN7001
CN7002
L7002
37
36
25
24
13
19
1
20
2
10
9
10 B/W VF PWB
YB20861-01-02

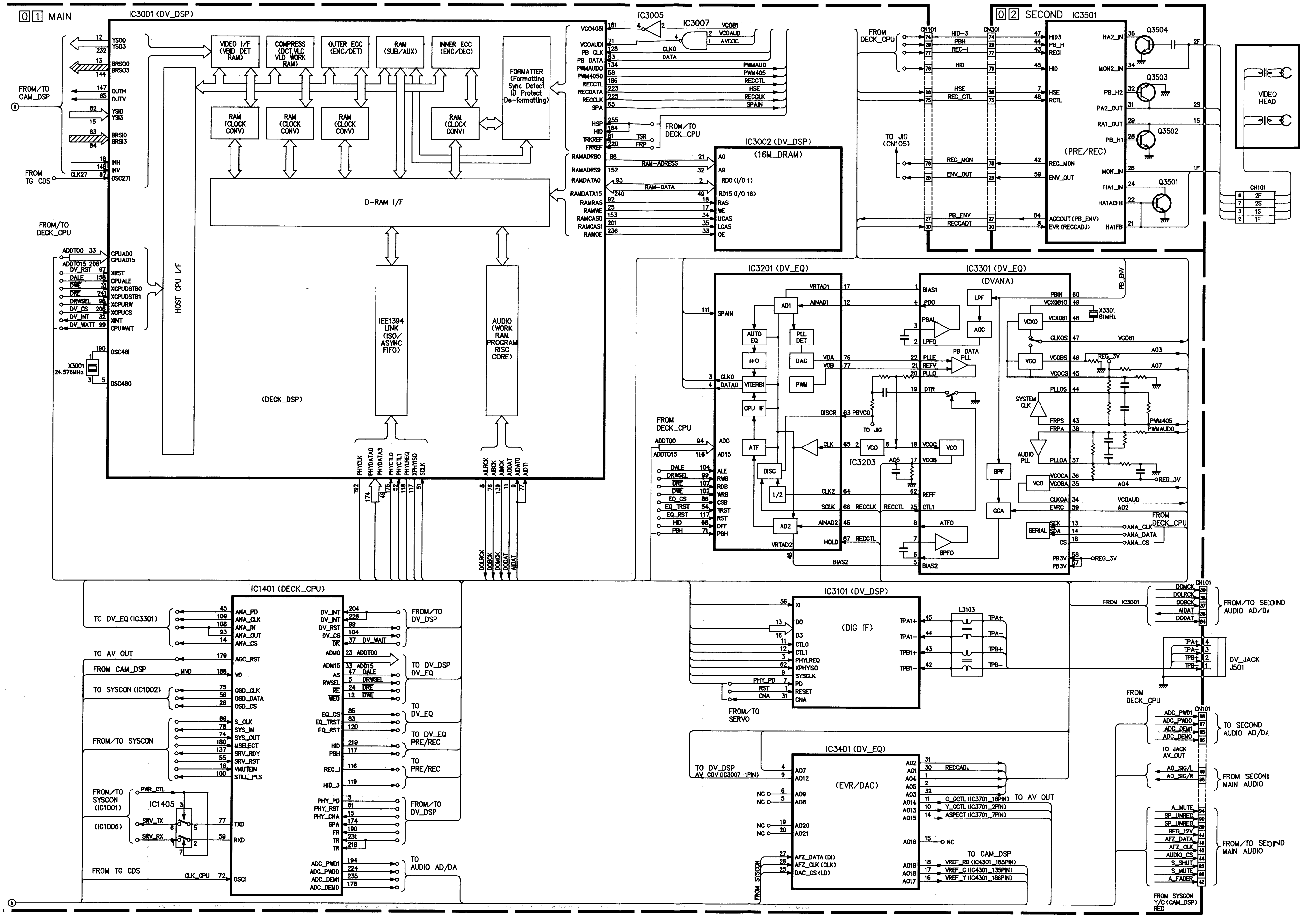
4.25 POWER SYSTEM BLOCK DIAGRAM



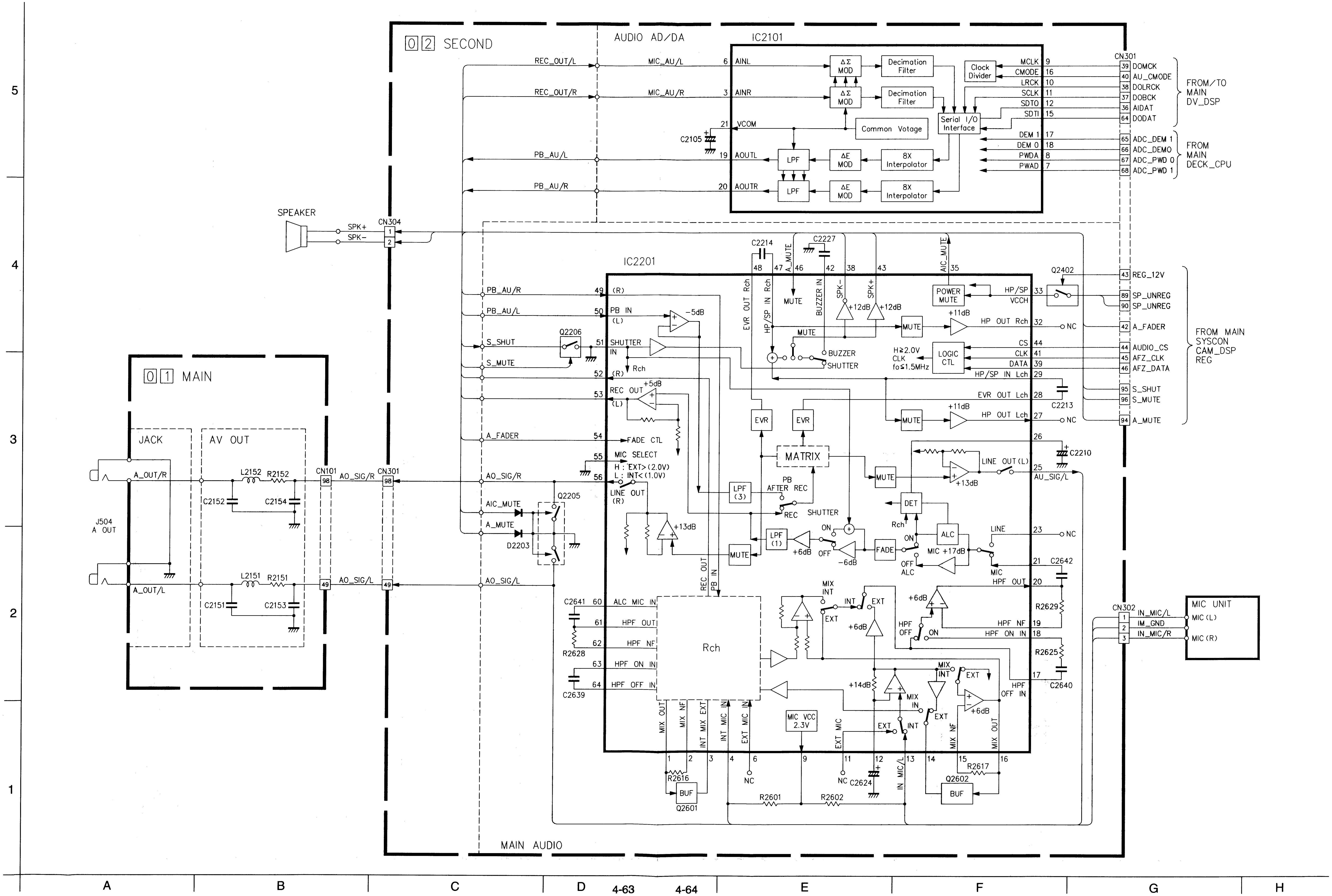
01 MAIN
JACK
LITHIUM
LIT_3V
BATT_SW
BATT+
BATT. TERM
IC501 ~ IC503
REG 4.8V
REG
Q6201~Q6203 LP UNREG
F6002
L6001
Q6121 DRUM PWR
Q6131 CAPSTAN PWR
F6003
L6002
IC6001
VCC 1
VCC 2
CNT 5
CNT 4
CNT 3
CNT 2
CNT 1
Q6101 3V REG
Q6141 2.2V REG
Q6111 4.8V REG
F6004
Q6112 VF REG 4.8V
L6112
Q6151 SW REG
Q6154 REG 12V
Q6156 REG 15V
Q6157 REG -15V
Q6155 REG -6.5V
L6401
F6001
Q6305 SW
BATT+
PWR_CTL
BATT DC DET AT PWR OFF
IC6301
LP_UNREG
DRUM_PWR
CAP_PWR
UNREG
REG_3V
D_3V
A_3V
REG_2.2V
REG_4.8V
VFREG 4.8V
LM_6V
REG_12V
REG_15V
REG_-15V
REG_-6.5V
PWR_CTL
Z_UNREG
SP_UNREG
SW_UNREG
AL_3V
02 SECOND
AUDIO AD/DA
IC2101
AU_REG 3V
CN301
CN101
MAIN AUDIO
Q2601 Q2602
Q2404 SW
Q2401 SW
Q2402 SW
IC2201
AUREG 4.8V
REG_4.8V
SP_UNREG
REG_12V
SPK-
SPK+
CN304
ONLY USE GR-DVL40
LCD MODULE
06 VF BL
CN7302
CN7301
CN104
RGT
VDD
T7301
VFREG 4.8V
10 B/W VF
CN7002
HLTOR
VEE
Q7001
IC7001
CN7001
VF_4.8V
07 MONITOR
NOTE) *1 ONLY USE GR-DVL40
*2 ONLY USE GR-DVL20
*3 ONLY USE GR-DVL30/DVL40
CN7501
CN102
Q7501
T7501
L7501
Q7503 SW
Q7502
Q7601
Q7617 SW
VGH
L7611
Q7602 ~ Q7606
Q7607 ~ Q7609
IC7604 IC7605
L7608
IC7603
IC7601
LCD_4.6V
REG_15V
REG_-15V
CN7502
VSS
VF IF
IC7801 IC7802
VFREG 4.8V
F7801
IC7803 4.6V REG
IC7804
Q7801
REG 12V
AV OUT
IC3701
IC3703 3.3V REG
DECK CPU
IC1401 IC1402 IC1404 Q1401 ~ Q1405
IC1405
AL_3V
CAMERA DSP
REG_2.2V
IC4301
IC4302 Q4302 ~ Q4308
Q4309 SW
Q4301
IRIS & AF/ZOOM
FZ_VCC
L4853
L4852
IC4801 IC4802
IC4851
Q4851
SYSCON
D1001
IC1004
IC1009 3V REG
IC1003 IC1006 ~ IC1008 Q1002
IC1001
BATT CHK
BATT SW
PWR CTL
RST
REMOTE
RST DET
IC1010
IC1011
IC1002 Q1005
IC1005 5V REG
DV DSP
IC3004 1.8V REG
IC3005
IC3007
IC3001
IC3002 IC3101
DV EQ
IC3203
IC3301
IC3201
IC3401
TG CDS
REG_12V
REG_-6.5V
IC5501
X5501
IC5602 5V REG
IC5601
NOTE) A_3V=A_REG_3V D_3V=D_REG_3V
04 CCD
CN106
CCD_12V
CCD_-6.5V
Q5002
IC5001
OP BLOCK
CN107
FOCUS VCC
ZOOM VCC
CAPSTAN MOTOR
02 SECOND
PRE/REC
Q3505 SW
IC3501
V_PB_L
Q3506
MDA
Q1601 SW
IC1601
CAP_PWR
LM_6V
DRUM_PWR
CN402
CN401
DRUM MOTOR
LOADING MOTOR
03 JUNCTION
CN504
CN501
CN503
08 ZOOM UNIT
CN109
09 OPE. COVER UNIT
CN110
CN108
LP_UNREG
LAMP
SPEAKER
A
B
C
D
E
F
G
H
1
2
3
4
5

4.26 VIDEO SYSTEM BLOCK DIAGRAM


04 CCD
TG CDS
01 MAIN
OP BLOCK
(CCD)
Q5002
BUF
CCD OUT
CN106
IC5601 (CDS/AGC/AD)
CAM_AD0~CAM_AD9
IC4301 (CAMERA_DSP)
(Y/C)
A/V CONV
V/M APT CTL
IH DL
Y/C SEPA (3LINE)
PROCESS
RGB SEPA
WB
G CTL
MATRIX
FIELD MEMORY CONTROL INTERFACE
D/A CONV
BLK
LIM
MOD
CLAMP
BUF
LPF
SUB CARRIER MODULE
FROM/TO DV_MAIN (DECK_DSP)
Q4301
S_SHUT
K_CTL
Q4309 Q4310
D_3V
FROM SYSCON CPU
IC5501 (TG/V.DRV)
X5501 54MHz CXO
A_3V
R5516 CLK_CPU (TO DECK_CPU)
IC1003 (E² PROM)
IC1004 (RTC)
X1002 32KHz
R1045
IC1001 (SYSCON CPU)
R1065
X1001 24MHz
IC4302 (FILED MEMORY)
CN107
FOCUS#3
FOCUS#1
FOCUS#4
FOCUS#2
ZOOM#2
ZOOM#4
ZOOM#3
ZOOM#1
BRIDGE DRIVER
PULSE GENERATOR
SERIAL-PARARELLE DECODER
IC4851
CLK45
XAVD
AFZ_CLK
AFZ_DATA
F/Z_CS
F/Z_RST
IRIS CTL
IC4801,IC4802
HG_VCC+
HG_OUT-
HG_VSS-
HG_OUT+
GND/DRIVE-
DUMP-
DRIVE+
DUMP+
HALL AMP
MOTOR DRIVE AMP
R4811,C4813
LPF
(COMP)
IRIS_O/C
HALL_AD
IRIS_PWM FROM IC4301-150PIN
IRIS & AF/ZOOM
JACK IC501 (R232C_IF)
PC J507
JLIP J503
IC502
IC503
REG_4.8V
D509
Q502
D507
D508
Q501
AL_3V
R1044
D1002
Q1001
IC1006
IC1002 (ON SCREEN)
OSD_DATA
OSD_CS
OSD_CLK
SRV_TX
SRV_RX
FROM/TO CAM_DSP
FROM/TO DECK_CPU
LCD_IND
LCD_FRG
V_MUTE
IC1007
MHD
MVD
J504 A/V_OUT
A_OUT
V_OUT
S_OUT J505
AV OUT
A_OUT/R
A_OUT/L
IC3701
Y_GCTL (FROM IC3401_10PIN)
75Ω
12dB AMP
18dB AMP
CLAMP
LOGIC
GCA
LPF
ATT
BPF
DV_Y
DV_C
C_GCTL (FROM IC3401_11PIN)
Q3701
AGC_RST (FROM IC1401_179PIN)
VF IF
IC7804
R7816
REG4.8V
D7801
Q4303
Q4302
Y_OUT
C_OUT
FROM CAM_DSP
LCD_Y
Q4304
Q4305 Q4306
Q4307 Q4308
10 VF IF ONLY USE GR-DVL20/DVL30
CN104
CN7001
VF_Y
VF_IND
IC7001
OSDIN
VIDEOIN
V_REF
CN7002
LCD MODULE
06 BL ONLY USE GR-DVL40
CN7301
CN7302
VF_G
VF_R
VF_B
G_OUT
R_OUT
B_OUT
07 MONITOR
CN102
CN7501
IC7601
OSDR
OSDG
OSDB
YS/TCLK
LCD_B-Y
LCD_R-Y
ROUT
GOUT
BOUT
CN7502
MON_R
MON_G
MON_B
IC7604
ONLY USE GR-DVL40
A
B
C
D
E
F
G
H
1
2
3
4
5

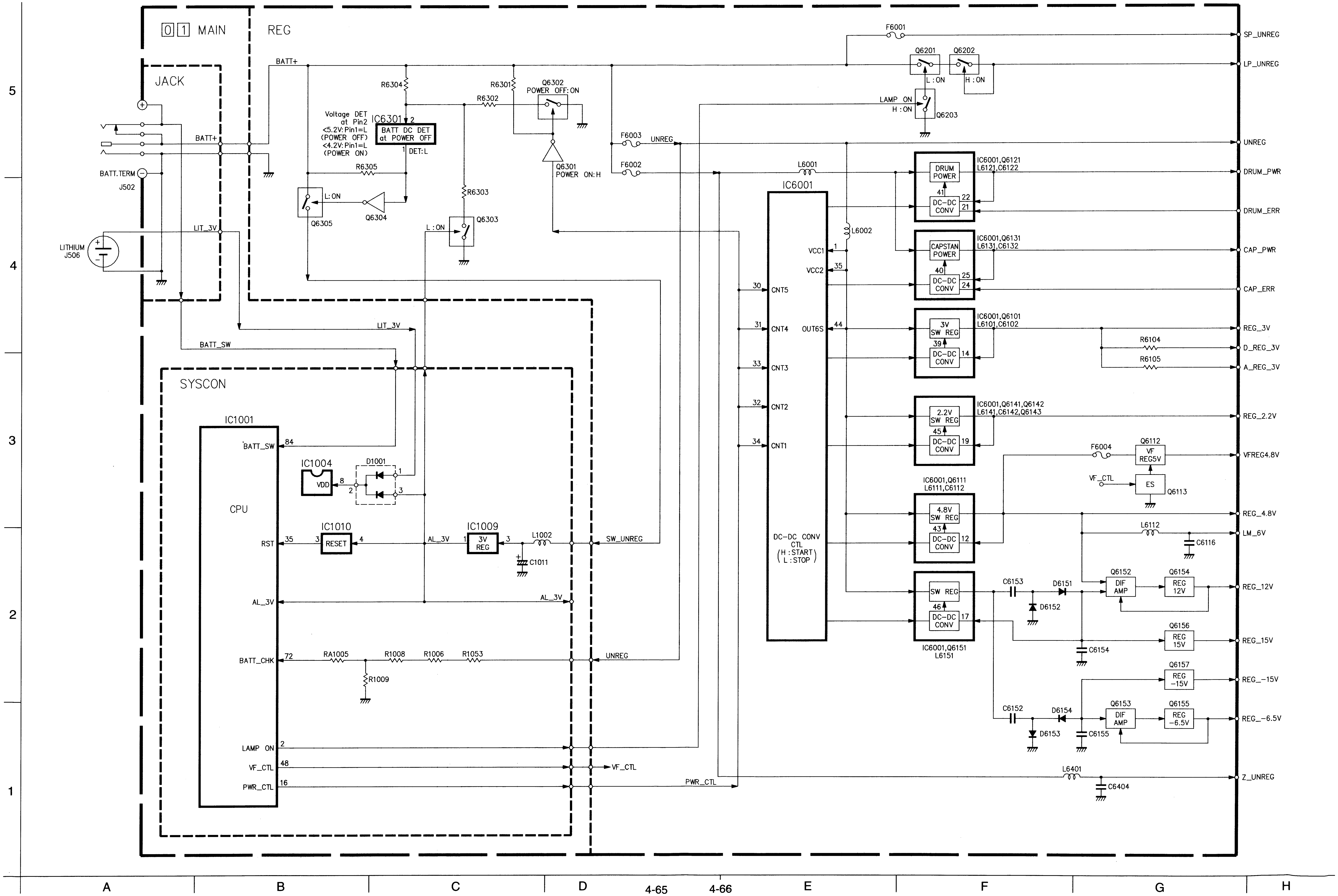

01 MAIN
IC3001 (DV_DSP)
VIDEO I/F (VBID DET RAM)
COMPRESS (DCT,VLC VLD WORK RAM)
OUTER ECC (ENC/DET)
RAM (SUB/AUX)
INNER ECC (ENC/DEC)
FORMATTER (Formatting Sync Detect ID Protect De-formatting)
RAM (CLOCK CONV)
D-RAM I/F
HOST CPU I/F
IEE1394 LINK (ISO/ASYNC FIFO)
AUDIO (WORK RAM PROGRAM RISC CORE)
(DECK_DSP)
FROM/TO CAM_DSP
FROM TG CDS
FROM/TO DECK_CPU
X3001 24.576MHz
IC3005
IC3007
IC3002 (DV_DSP)
(16M_DRAM)
RAM-ADRESS
RAM-DATA
02 SECOND IC3501
(PRE/REC)
Q3504
Q3503
Q3502
Q3501
VIDEO HEAD
CN101
CN301
TO JIG (CN105)
IC3201 (DV_EQ)
IC3301 (DV_EQ)
(DVANA)
IC3203
X3301 81MHz
SYSTEM CLK
AUDIO PLL
PB DATA PLL
IC1401 (DECK_CPU)
TO DV_EQ (IC3301)
TO AV OUT
FROM CAM_DSP
TO SYSCON (IC1002)
FROM/TO SYSCON
FROM/TO SYSCON (IC1001)
IC1405
(IC1006)
FROM TG CDS
FROM/TO DV_DSP
TO DV_DSP DV_EQ
TO DV_EQ
TO DV_EQ PRE/REC
TO PRE/REC
TO AUDIO AD/DA
IC3101 (DV_DSP)
(DIG IF)
L3103
FROM/TO SERVO
DV_JACK J501
FROM IC3001
FROM/TO SECOND AUDIO AD/DA
FROM DECK_CPU
TO SECOND AUDIO AD/DA
TO JACK AV_OUT
FROM SECOND MAIN AUDIO
FROM/TO SECOND MAIN AUDIO
IC3401 (DV_EQ)
(EVR/DAC)
TO DV_DSP AV COV (IC3007-1PIN)
TO AV OUT
TO CAM_DSP
FROM SYSCON
FROM SYSCON Y/C (CAM_DSP) REG
I
J
K
L
M
N
O
P

4.27 AUDIO SYSTEM BLOCK DIAGRAM



02 SECOND
AUDIO AD/DA
IC2101
REC_OUT/L
MIC_AU/L
AINL
REC_OUT/R
MIC_AU/R
AINR
VCOM
C2105
PB_AU/L
AOUTL
PB_AU/R
AOUTR
ΔΣ MOD
Decimation Filter
Clock Divider
Common Votage
Serial I/O Interface
LPF
ΔΣ MOD
8X Interpolator
MCLK
CMODE
LRCK
SCLK
SDTO
SDTI
DEM 1
DEM 0
PWDA
PWAD
CN301
DOMCK
AU_CMODE
DOLRCK
DOBCK
AIDAT
DODAT
FROM/TO MAIN DV_DSP
ADC_DEM 1
ADC_DEMO
ADC_PWD 0
ADC_PWD 1
FROM MAIN DECK_CPU
SPEAKER
SPK+
SPK-
CN304
IC2201
C2214
C2227
A_MUTE
AIC_MUTE
EVR OUT Rch
HP/SP IN Rch
MUTE
BUZZER IN
SPK-
SPK+
+12dB
POWER MUTE
HP/SP
VCCH
Q2402
REG_12V
SP_UNREG
SP_UNREG
+11dB
HP OUT Rch
NC
A_FADER
CS
CLK
DATA
AUDIO_CS
AFZ_CLK
AFZ_DATA
FROM MAIN SYSCON CAM_DSP REG
BUZZER
SHUTTER
H≧2.0V CLK fo≦1.5MHz
LOGIC CTL
HP/SP IN Lch
EVR OUT Lch
C2213
HP OUT Lch
S_SHUT
S_MUTE
A_MUTE
PB_AU/R
PB_AU/L
PB IN
-5dB
S_SHUT
Q2206
SHUTTER IN
Rch
S_MUTE
REC OUT
+5dB
EVR
MATRIX
A_FADER
FADE CTL
MIC SELECT
H : EXT>(2.0V)
L : INT<(1.0V)
LINE OUT (R)
LPF (3)
PB
AFTER REC
SHUTTER
REC
MUTE
LINE OUT(L)
+13dB
AU_SIG/L
C2210
DET
Rch
ALC
LINE
MIC +17dB
ON
OFF
ALC
FADE
-6dB
+6dB
LPF (1)
C2642
MIC
HPF OUT
01 MAIN
JACK
AV OUT
A_OUT/R
L2152
R2152
CN101
AO_SIG/R
C2152
C2154
J504 A OUT
A_OUT/L
L2151
R2151
C2151
C2153
AO_SIG/L
AIC_MUTE
A_MUTE
D2203
Q2205
ALC MIC IN
HPF OUT
HPF NF
HPF ON IN
HPF OFF IN
C2641
R2628
C2639
Rch
MIX INT
EXT
+6dB
+6dB
HPF OFF ON
HPF NF
HPF ON IN
R2629
R2625
C2640
HPF OFF IN
+14dB
MIX INT EXT
MIC VCC 2.3V
MIX OUT
MIX NF
INT MIX EXT
INT MIC IN
EXT MIC IN
EXT MIC
IN MIC/L
MIX NF
MIX OUT
R2616
BUF
Q2601
NC
R2601
R2602
C2624
R2617
Q2602
BUF
CN302
IN_MIC/L
IM_GND
IN_MIC/R
MIC UNIT
MIC (L)
MIC (R)
MAIN AUDIO
5
4
3
2
1
A
B
C
D
E
F
G
H

4.28 REGULATOR SYSTEM BLOCK DIAGRAM



01 MAIN
REG
JACK
SYSCON
BATT+
BATT.TERM
J502
LITHIUM
J506
LIT_3V
BATT_SW
R6304
R6301
R6302
R6305
R6303
Q6302
POWER OFF:ON
Voltage DET at Pin2
<5.2V: Pin1=L (POWER OFF)
<4.2V: Pin1=L (POWER ON)
IC6301
BATT DC DET at POWER OFF
DET:L
L:ON
Q6305
Q6304
Q6301
POWER ON:H
L:ON
Q6303
F6001
F6002
F6003
UNREG
Q6201
Q6202
L:ON
H:ON
LAMP ON
H:ON
Q6203
L6001
L6002
IC6001
VCC1
VCC2
CNT5
CNT4
CNT3
CNT2
CNT1
OUT6S
DC-DC CONV CTL (H:START L:STOP)
DRUM POWER
DC-DC CONV
IC6001,Q6121 L6121,C6122
CAPSTAN POWER
IC6001,Q6131 L6131,C6132
3V SW REG
IC6001,Q6101 L6101,C6102
2.2V SW REG
IC6001,Q6141,Q6142 L6141,C6142,Q6143
4.8V SW REG
IC6001,Q6111 L6111,C6112
SW REG
IC6001,Q6151 L6151
R6104
R6105
F6004
Q6112
VF REG5V
VF_CTL
ES
Q6113
L6112
C6116
C6153
D6151
D6152
C6154
Q6152
DIF AMP
Q6154
REG 12V
Q6156
REG 15V
Q6157
REG -15V
C6152
D6154
D6153
C6155
Q6153
Q6155
REG -6.5V
L6401
C6404
SP_UNREG
LP_UNREG
UNREG
DRUM_PWR
DRUM_ERR
CAP_PWR
CAP_ERR
REG_3V
D_REG_3V
A_REG_3V
REG_2.2V
VFREG4.8V
REG_4.8V
LM_6V
REG_12V
REG_15V
REG_-15V
REG_-6.5V
Z_UNREG
IC1001
CPU
BATT_SW
RST
AL_3V
BATT_CHK
LAMP ON
VF_CTL
PWR_CTL
IC1004
VDD
D1001
IC1010
RESET
IC1009
3V REG
L1002
C1011
SW_UNREG
AL_3V
RA1005
R1008
R1006
R1053
R1009
UNREG
PWR_CTL
A
B
C
D
E
F
G
H
1
2
3
4
5

4.29 VOLTAGE CHARTS

Note: Parts whose data cannot be obtained by physical measurement (for example, CSP IC, etc.) are omitted from the following chart in some cases.

<MAIN>

MODE PIN NO.	REC	PLAY
CN101		
1	1.6	1.6
2	6.6	6.7
3	0.8	1.5
4	1.6	1.6
5	1.6	1.6
6	1.5	1.5
7	0	0
8	0	0
9	3	3
10	0	0
11	1.7	1.7
12	1.5	1.5
13	-4	0.6
14	-4	0.6
15	4.8	4.8
16	4.8	4.8
17	3	1.7
18	3	3
19	3	3
20	-	-
21	1	2.2
22	1.2	1.2
23	1.2	1.2
24	0	0
25	3	1.9
26	3	3
27	1.6	1
28	0	1.5
29	0	3
30	1.5	1.5
31	0	0
32	0	0
33	0	0
34	0	0
35	0	0
36	1.5	0
37	1.5	2
38	1.5	1.5
39	2.5	1.5
40	3	0
41	3	3
42	0	0
43	15.4	15.4
44	-4	3
45	3	3
46	3	1.6
47	4.8	4.8
48	4.7	4.8
49	0	0.9
50	0	0
51	3	3
52	0	0
53	2.2	2.1
54	2.1	2.1
55	1.3	1.6
56	2.7	2.7
57	3	3
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	4.8	4.8
64	4.8	4.8
65	4.8	0
66	3	3
67	0	0
68	3	3
69	3	1.1
70	3	1.1
71	1.9	1.1
72	0	0
73	0	0
74	0	3
75	3	0
76	1.5	1.5
77	2.9	1
78	0	0
79	0	0
80	0	1
81	3	0
82	3	1
83	3	3
84	1.5	1.5
85	0	1
86	3	3
87	0	0
88	2.6	0
89	6.7	6.7
90	6.7	6.7
91	0	0
92	0	0
93	0	0
94	0	0
95	0	0
96	3	3
97	3	0
98	0	0
99	0	0
100	0	0
CN102		
1	0	0
2	0	0
3	0	0
4	0	0
5	3	3
6	5.8	6
7	6	6
8	4.8	4.8
9	4.8	4.8
10	4.8	4.8
11	0.7	0
12	0.9	0.9
13	0	0
14	0	0
15	1.5	1.5
16	2.6	2.6
17	0	0
18	15.4	0
19	-15.4	-15.4
20	3	3
21	3	0
22	3	0
23	0	0
24	0	0
25	0	3
26	0	0
27	1.2	0
28	3	3
29	-	0
30	4.5	4.5
31	4.5	4.5
32	1.2	1.2
33	0	12.1
34	1.3	1.3
35	3	3
36	2.1	2.1
37	0	0
38	0	0
39	0	0
40	3	2.9
CN104		
1	5.4	5.4
2	5.8	5.8
3	6	6
4	6	6
5	3	3
6	0.7	0.7
7	0	0.9
8	0	0
9	0	0
10	1.5	1.5
11	2.6	2.6
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	2.1	2.2
18	1.8	0
19	4.8	4.8
20	12.1	12.1
CN105		
1	3	3
2	0	0
3	0	0
4	1.3	3
5	1.5	3
6	0	0
7	3	6
8	6	6
9	6	3
10	2.9	0
11	2.9	1.5
12	3	1.3
13	2.9	1.1
14	0	0
15	3	3
16	3	3
17	0	0.6
18	0	0.8
19	3	3
20	3	1.9
21	0	1.3
22	0	0
23	0	1.1
24	5.9	5.9
25	0	0
26	0	0
27	3	3
28	3	3
29	0	0
30	0	0
CN106		
1	0	-7
2	1.3	0
3	1.5	0
4	10.1	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	6.9
10	0	0
11	0	0
12	0	0
13	12.1	12.1
14	0	12.1
15	0	0
16	-6.5	12.1
17	-6.5	0
18	12	11.7
CN107		
1	0.9	1.9
2	0.7	2.1
3	2.2	0.5
4	2.2	0.4
5	2.2	0.4
6	2.2	0
7	2.2	0
8	2.2	0
9	4.8	4.8
10	0	0
11	5.2	-
12	1.6	1.2
13	1.6	2.8
14	1.6	1.2
15	0	0
16	1.9	1.9
17	1.2	1.3
18	1.9	1.9
19	0	2.5
20	0	0
21	3.5	3.8
22	4.2	4.2
CN109		
1	3	3
2	3	3
3	2.3	2.2
4	0	2.9
5	0	3
6	3	3
7	3	0
8	3	3
9	3	3
10	0	0
11	3	3
12	3	3
13	0	0
14	0	0
15	1.5	1.5
CN110		
1	0	0
2	0	0
3	0	0
4	0	0
5	3	3
6	3	3
7	3	3
8	3	3
9	3	3
10	3	3

<SECOND>

MODE PIN NO.	REC	PLAY
CN401		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	2.5	2.4
8	2.4	2.3
9	0.9	0.8
10	0.9	0.9
11	0.8	0.9
12	0.8	0.9
13	0.8	0.9
14	0.8	0.9
15	2.5	2.5
16	0.8	0.8
17	0	0
18	0	0
19	3	3
20	0	0
21	3	3
22	3	3
23	3	3
24	2.7	2.7
25	0	0
26	-	-
27	1.2	1.2
28	-	-
29	1.2	1.1
30	0.8	0.8
31	0	0
32	0	0
33	3	3
34	0	0
35	0	0
CN402		
1	0.5	0.5
2	0.5	0.5
3	2.4	2.4
4	0	0
5	2.4	2.4
6	4.8	4.8
7	0.6	0.6
8	0.6	0.6
9	0.5	0.5
10	0.5	0.5
11	2.4	2.4
12	2.4	2.4
13	2.4	2.4
14	2.4	2.4
15	2.4	2.4
16	2.6	2.6
17	2.4	2.4
18	2.4	2.4
CN403		
1	0	0
2	0	0
3	3	3
4	3	3
5	3	3
6	0	0
CN404		
1	-	-
2	0	0
3	-	-
4	0	0
5	-	-
6	0	0
7	-	-
8	0	0

<JUNCTION>

MODE PIN NO.	REC	PLAY
CN502		
1	0	0
2	-0.6	-3.4
3	0.8	0.8
4	1.2	1.2
5	-	-
6	1.2	1.2
7	-	-
8	0	0
9	0.8	0.8
10	3	3
11	3	3
12	3	3
13	0	0
14	0	0
15	3	3
CN503		
1	2.4	2.4
2	2.5	2.5
3	0.9	0.9
4	0.9	0.9
5	0.8	0.8
6	0.9	0.9
7	0.8	0.9
8	0.8	0.9
9	2.5	2.4
10	0.8	0.9
11	0	0
CN504		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0

<JACK>

MODE PIN NO.	REC	PLAY
IC501		
1	0	0
2	4.8	4.8
3	4.8	4.8
4	4.8	4.8
5	4.8	4.8
6	0	0
7	0	0
8	0	0
9	0	4.8
10	0	0
11	4.8	4.8
12	0	0
13	0	0
14	0	0
15	4.9	4.8
16	4.8	4.8
IC502		
1	4.8	4.8
2	0	0
3	0	0
4	4.8	4.9
5	4.8	4.8
IC503		
1	4.8	4.8
2	4.8	4.8
3	0	0
4	0	0
5	4.8	4.8
6	4.8	4.8
7	0	0
8	4.9	4.8
Q501		
E	0	0
C	2.2	0.7
B	0	0
Q502		
E	0	0
C	3	3
B	0	0

<VF IF>

MODE PIN NO.	REC	PLAY
IC7801		
1	3	3
2	3	3
3	0	6.7
4	6.7	6.7
5	6.7	6.7
IC7802		
1	3	3
2	0	0
3	0	0
4	0	0
5	0	0
IC7803		
1	0	0
2	0	0
3	1.3	1.3
4	4.5	4.5
5	4.8	4.8
Q7801		
1	5.4	5.4
2	6	6
3	0	0
4	0	6
5	0	5.5
6	12.1	12.1

<SYSCON>

MODE PIN NO.	REC	PLAY
IC1001		
1	3	0
2	0	0
3	0	0
4	0	2.9
5	0.7	2.8
6	0.7	0.6
7	3	3
8	0	0
9	0	0.5
10	0	1.1
11	0.7	0
12	0.7	1.5
13	0.7	0.6
14	0.7	2.2
15	0.7	0.8
16	3	3
17	3	1.1
18	0.7	0
19	0.7	0
20	0.7	3
21	0.7	3
22	0.7	3
23	0	0
24	0	0
25	3	3
26	0	1.9
27	1.2	1.2
28	0	0
29	3	3
30	1.5	1.5
31	1.4	1.4
32	0	0
33	1.5	1.5
34	2.9	3
35	0	3
36	0	3
37	0	0
38	3	3
39	2.9	2.9
40	0	0
41	0	0
42	0	0
43	0.9	-
44	0	0
45	0.5	0
46	3	3
47	0	0
48	0	0
49	3	3
50	3	3
51	1.5	1.5
52	0	0
53	3	3
54	3	3
55	3	3
56	3	3
57	3	3
58	0	3
59	3	0
60	3	3
61	3	3
62	3	3
63	3	3
64	3	3
65	0	0
66	3	3
67	3	3
68	3	3
69	0	0
70	0	0
71	0	0
72	2.4	2.4
73	3	3
74	3	3
75	1.5	1.5
76	2.2	2.5
77	1.5	0
78	0	0
79	0	0
80	0	0
81	1.9	0
82	0	0
83	0	0
84	0	0
85	0	0
86	3	3
87	3	3
88	0	0
89	3	3
90	0	0
91	3	3
92	0	0
93	0	0
94	2.4	2.5
95	2.4	2.9
96	2.3	1.6
97	0	0.5
98	3	3
99	0	0
100	2.8	3
101	2.8	3
102	2.8	3
103	0	3
104	2.8	3
105	2.8	0
106	2.8	3
107	0	0
108	0	0
109	0	0
110	3	3
111	3	3
112	0	0
113	0	0
114	3	3
115	0	0
116	0	0
117	3	3
118	0	0
119	3	3
120	1.6	1.2
121	3	3
122	3	3
123	3	3
124	3	3
125	0	0
126	0	0
127	0	0
128	0	0
IC1002		
1	2.7	2.7
2	0	0
3	2.8	2.7
4	3	0.9
5	3	3
6	0	0
7	1.2	1.2
8	1.2	1.2
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	2.9	2.9
20	0	0
IC1003		
1	3	3
2	1.9	0
3	0.7	3
4	0	0
5	3	0
6	3	3
7	3	3
8	3	3
IC1004		
1	0	0
2	3	0
3	1.9	3
4	0	0
5	0	0
6	0.5	0.5
7	0.4	0.8
8	3.1	3.1
IC1005		
1	0	0
2	0	0
3	4.8	2.9
IC1006		
1	3	3
2	3	0
3	0	0
4	0	0
5	3	3
6	3	3
7	0	0
8	3	3
IC1007		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	3	3
IC1008		
1	3	3
2	3	3
3	3	3
4	0	0
5	3	3
6	3	3
7	3	3
8	3	3
IC1009		
1	2.9	3
2	0	0
3	6.7	6.7
IC1010		
1	0	0
2	0	0
3	3	3
4	3	3
IC1011		
1	0	2.4
2	2.4	0
3	0	2.4
4	0	0
5	2.4	2.4
6	0	2.4
7	0	0
8	4.8	4.8
Q1001		
E	0	0
C	4.8	4.8
B	0	0
Q1002		
E	3	3
C	0	0
B	3	3
Q1003		
E	6.7	6.6
C	6.6	4.3
B	0	6.2
Q1004		
E	0	0
C	0	4.2
B	3	0
Q1005		
E	0	0
C	2	1.9
B	-	-

<DECK CPU>

MODE PIN NO.	REC	PLAY
IC1402		
1	0	0
2	3	3
3	-	-
4	0	0
5	-	-
6	0	0
7	-	-
8	3	3
IC1404		
1	3	-
2	3	3
3	2.9	3
4	0	0
5	0	0
6	0	0
7	0	0
8	0.6	1.4
9	0.6	1.4
10	3	3
11	3.1	3
12	3	3
13	3	3
14	3	3
IC1405		
1	3	3
2	3	3
3	3	3
4	0	0
5	3	3
6	3	3
7	3	3
8	3	3
Q1401		
E	0	0
C	3	3
B	0	3
Q1402		
E	0	0
C	0	0
B	0	0
Q1403		
E	0	0
C	3	3
B	0	0
Q1404		
E	3	3
C	2.7	2.7
B	0	0
Q1405		
E	3	3
C	0	0
B	3	3

<DV DSP>

MODE PIN NO.	REC	PLAY
IC3002		
1	3	1.9
2	1.3	1.4
3	1.3	1.4
4	1.4	1.4
5	1.3	1.3
6	3	3
7	1.4	1.4
8	1.3	1.4
9	1.4	1.5
10	0	1.7
11	0	1.9
12	-	-
13	-	-
14	-	-
15	0	1.9
16	0	1.9
17	2.2	2.1
18	1.2	1.1
19	0	1.9
20	0	1.9
21	1.6	1.8
22	1.5	1.6
23	1.6	1.7
24	1.5	1.5
25	3	3
26	0	0
27	1.5	1.4
28	1.5	1.5
29	1.5	1.5
30	1.4	1.5
31	1.4	1.4
32	1.4	1.4
33	0	2.1
34	1.9	2
35	2	2
36	0	0
37	-	-
38	-	-
39	-	-
40	0	0
41	1.3	1.3
42	1.3	1.3
43	0	1.4
44	1.3	1.3
45	0	0
46	1.4	1.4
47	1.3	1.3
48	1.4	1.4
49	1.5	1.5
50	0	0
IC3004		
1	0	0
2	0	0
3	0	1.3
4	1.8	1.8
5	0	0
6	2.2	2.2
IC3005		
1	-	-
2	-	-
3	0	0
4	1.1	1.1
5	2.2	2.2
IC3007		
1	0	1.5
2	1.6	0.9
3	0	0
4	1.8	0.7
5	1.8	1.8
IC3101		
1	0	3
2	3	3
3	0	0
4	3	3
5	3	3
6	3	3
7	3	0
8	0	0
9	0	1.4
10	0	0
11	0	1.5
12	0	1.5
13	0	1.5
14	0	1.5
15	0	1.5
16	0	1.5
17	0	0
18	0	0
19	3	3
20	3	3
21	3	3
22	3	3
23	0	0
24	3	3
25	3	3
26	0	3
27	3	3
28	0	0
29	0	0
30	0	0
31	3	3
32	0	0
33	2.2	2.2
34	2.2	2.2
35	1.6	-
36	2	-
37	0	0
38	0	0
39	1.4	1.5
40	1.4	1.5
41	0	0
42	0	0
43	1.5	0
44	0	1.8
45	0.5	1.8
46	0.4	1.8
47	-	1.8
48	-	1.8
49	0	0
50	0	0
51	3	3
52	0	0
53	0	0
54	0	3
55	3	3
56	0	0
57	0	3
58	3	3
59	0	0
60	0	0.6
61	0	0
62	2.7	1.6
63	0	0
64	0	0

<DV EQ>

MODE PIN NO.	REC	PLAY
IC3201		
1	0	0
2	0	0
3	0	1
4	0	1.4
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0.8
13	0	0
14	0	0
15	0	-
16	0	0
17	0	1.1
18	0	3
19	3	3
20	3	3
21	3	3
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	3	3
32	0	0
33	2.2	2.2
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	1.1
46	0	0
47	0	0
48	0	1.8
49	3	3
50	0	0
51	3	3
52	0	0
53	0	0
54	3	3
55	3	3
56	0.6	1.5
57	3	3
58	2.2	2.2
59	0	0
60	3	3
61	0	0
62	0	0
63	0	1.5
64	0	1.3
65	1.1	1
66	1.2	1.2
67	0	0
68	1.5	1.5
69	0	0
70	0	0
71	0	3
72	0	0
73	3	3
74	3	3
75	0	2.7
76	0.8	1.6
77	0.8	1.6
78	0	0
79	0	0
80	3	3
81	0	0
82	0	0
83	0	0
84	0	0
85	0	0
86	3	3
87	0	0
88	0.4	0.7
89	0	1.4
90	0	0
91	3	3
92	0	0
93	2.2	2.2
94	2.7	2.2
95	0.4	0.5
96	2.7	2.2
97	0	0
98	0	0
99	2.9	3
100	0	0
101	0	0
102	2.9	3
103	0.4	0.6
104	0	0
105	0	0
106	0	0
107	3	3
108	0	0
109	0	0
110	0	0
111	0	0
112	0	1.5
113	0	0.5
114	0	0
115	0	0.4
116	0	0
117	3	3
118	2.2	2.2
119	0	0
120	3	3
IC3203		
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
IC3301		
1	0	1.1
2	2.2	1.3
3	0	1.5
4	0	0.8
5	0	1.8
6	1	1
7	0	1.8
8	0	1.1
9	0	0
10	0	0
11	0	0
12	0	0
13	3	0
14	3	3
15	2.7	0
16	3	3
17	0	1.3
18	3	1.5
19	0	0
20	3	1.5
21	0.8	1.6
22	0.8	1.7
23	3	3
24	3	3
25	3	0
26	3	3
27	0	0
28	0	0
29	0	0
30	2.4	2.4
31	0.7	0.8
32	2.3	2.4
33	0.7	0.8
34	1.9	2
35	1.7	1.5
36	1.8	1.6
37	2.3	1.6
38	0	1.9
39	0	1.4
40	0	0
41	0	0
42	0	0
43	1.6	1.6
44	1.3	1.4
45	1.3	1.3
46	0.8	0.8
47	-	-
48	-	-
49	1.3	1.3
50	0	0.8
51	0	0
52	0	0
53	0.7	0.6
54	1.5	1.5
55	3	3
56	3	3
57	3	3
58	3	3
59	2.7	2.7
60	2.5	2.4
61	0	1.6
62	2.6	2.6
63	1.9	2
64	0.4	0.8
IC3401		
1	1.5	0
2	3	0
3	0	1.5
4	0.7	0.7
5	0	0
6	3	3
7	3	0
8	1.2	1.2
9	0	1.5
10	1.4	1.4
11	1.4	1.4
12	3	3
13	4.8	4.8
14	0	0
15	3	3
16	1.7	1.7
17	1.4	1.4
18	1.1	1.1
19	0.7	0.8
20	2.1	2.1
21	2.4	2.4
22	1.6	1.6
23	3	0
24	3.3	3.4
25	0	0
26	3	3
27	3	3
28	0	0
29	0	0
30	1.5	1.6
31	2.7	0
32	1.6	0

<AV OUT>

MODE PIN NO.	REC	PLAY
IC3701		
1	0	1.9
2	1.4	1.4
3	1.4	0
4	1.7	1.7
5	0	0
6	0	0
7	0	0
8	0	0
9	2.4	0
10	2.4	2.4
11	0	1.7
12	1.7	1.7
13	0	0
14	2	2
15	4.8	4.8
16	3.6	3.5
17	0	0
18	1.4	1.4
19	1.8	1.8
20	2.3	2.3
IC3703		
1	0	0
2	4.8	4.8
3	3.5	3.5
4	0	0
5	0	0
Q3701		
E	0	0
C	1.7	1.7
B	0	0

<CAMERA DSP>

MODE PIN NO.	REC	PLAY
IC4302		
1	0	0
2	1.5	1.2
3	1.3	1.1
4	1.4	1.4
5	1.1	1.1
6	1.1	1.1
7	1.3	1.1
8	1.3	1.6
9	0	0
10	0	0
11	0	0
12	0	0
13	2.7	2.7
14	2	3
15	1.2	1.2
16	1.1	1.1
17	3	3
18	1.4	1.4
19	1.2	1.3
20	0	0
21	1.3	1.2
22	1.4	1.2
23	3	3
24	1.3	1.2
25	0	1.1
26	0	0
27	2	2
28	1.3	1.2
29	3	3
30	1.6	1.6
31	1	1.1
32	3	3
33	0	0
34	2.7	2.7
35	0	0
36	0	0
37	0	0
38	1.3	1.6
39	0.7	0.7
40	1.3	1.2
41	0	0
42	1.7	2
43	1.1	1.1
44	1.3	0
Q4301		
E	0	0
C	0	0
B	0	0
Q4302		
E	1.2	1.2
C	0	0
B	0.5	0.5
Q4303		
E	1.6	1.6
C	3	3
B	2.2	2.2
Q4304		
E	2.2	2.2
C	0	0
B	1.6	1.6
Q4305		
E	1.1	1.1
C	0	0
B	0.5	0.5
Q4306		
E	1.3	1.3
C	0	0
B	0.7	0.7
Q4307		
E	1.1	1.1
C	0	0
B	0.4	0.6
Q4308		
E	1.2	1.2
C	0	0
B	0.6	1.2
Q4309		
E	3	3
C	0	0
B	3	3
Q4310		
E	0	0
C	3	3
B	0	0

<IRIS & AF/ZOOM>

MODE PIN NO.	REC	PLAY
IC4801		
1	1.5	0
2	2.2	0.5
3	2.1	0
4	4.8	4.8
5	0	0
6	1.9	0
7	2.2	0
8	2.6	2.5
9	1.9	1.9
10	1.9	1.9
11	0	0
12	0.4	0.4
13	0.4	0.6
14	1	1
IC4802		
1	0	0
2	1.6	1.3
3	0	0
4	0	0
5	1.9	1.9
6	1.9	1.9
7	1.9	0
8	4.8	4.8
IC4851		
1	0	0
2	0.8	0
3	0	0
4	0	0
5	0.4	0
6	0	0
7	0	0
8	3	3
9	4.8	4.8
10	2.2	2.2
11	0	0
12	2.2	2.3
13	4.8	4.8
14	2.2	2.2
15	0	0
16	2.2	2.2
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	4.8	4.8
24	2.2	2.2
25	0	0
26	2.2	2.2
27	4.8	4.8
28	2.2	2.2
29	0	0
30	2.2	2.2
31	0	0
32	0	0
33	0	0
34	3	3
35	3	3
36	1.4	1.5
37	1.4	1.5
38	3	3
Q4801		
E	0.4	0.4
C	1	1
B	1	1
Q4851		
E	0	0
C	3.5	3.5
B	0	0

<TG CDS>

MODE PIN NO.	REC	PLAY
IC5501		
1	-	1.1
2	2.5	0
3	3	0
4	3	3
5	0	0
6	3	3
7	0	0
8	0.6	0
9	0	0
10	3	3
11	1.4	0
12	3	3
13	0	0
14	1.4	0
15	0	0
16	3	3
17	0	0
18	0	0
19	2.4	0
20	0	0
21	0	0
22	3	3
23	0	0
24	2.9	3
25	0	3
26	3	3
27	0	0
28	1.3	1.8
29	0	0
30	1.4	1.6
31	0	3
32	0	0
33	3	3
34	1.5	0
35	0	0
36	3	3
37	3	0
38	3	0
39	0	0
40	0	0
41	-6.5	0
42	0	12.1
43	12.1	12.1
44	-6.5	12.1
45	-6.5	12.1
46	0	-6.9
47	0	0
48	3	0
IC5601		
1	0	0
2	1.4	0
3	1.5	3
4	1.4	3
5	1.4	3
6	1.4	0
7	1.5	0
8	0.8	3
9	1.1	0
10	0.7	3
11	0	0
12	0	0
13	0	0
14	0	0
15	3	3
16	1.3	0
17	2.9	0
18	2.4	0
19	2.5	0
20	0	0
21	3	3
22	0	0
23	1.5	0
24	0	0
25	0	0
26	3	3
27	1.5	1.5
28	0	0
29	0	0
30	0	0
31	3	3
32	1.2	1.2
33	1.4	1.5
34	1.8	1.9
35	1.2	1.2
36	0	0
37	0	3.1
38	3	3
39	0	0
40	0	0
41	3	3
42	0	0
43	0	3
44	3	3
45	3	3
46	3	3
47	0	0
48	0	0
IC5602		
1	4.8	4.8
2	0	0
3	1.2	1.2
4	3	3
5	4.8	4.8

<REG>

MODE PIN NO.	REC	PLAY
IC6001		
1	6.7	6.7
2	1	1
3	0.9	0.9
4	2.2	1
5	1	1.2
6	1.2	2.2
7	2.2	2.2
8	2.2	1
9	1	1
10	1.3	1.3
11	2.2	2.2
12	1	1
13	1.2	1.2
14	1	1
15	0	0.9
16	1	1
17	1	0
18	1	1
19	1	1
20	0.8	0.5
21	0.4	0.4
22	0.4	0.4
23	0.8	0.8
24	0	0
25	0	0
26	0.7	0.7
27	0	0
28	0	0
29	0	0
30	3	3
31	3	3
32	3	3
33	3	3
34	3	3
35	6.7	6.7
36	2.6	2.6
37	0	0
38	0	0
39	3.5	3.4
40	5	4.9
41	4.5	4.4
42	0	0
43	1.6	1.6
44	6.7	6.7
45	2.3	2.3
46	2.7	2.7

MODE PIN NO.	REC	PLAY
47	0	0
48	0	0
IC6301		
1	6.7	6.7
2	6.4	6.4
3	0	0
4	0	0
Q6101		
G	3.5	3.4
D	3.1	3.1
S	6.7	6.7
Q6111		
G	3.5	1.6
D	3.1	4.9
S	6.7	6.7
Q6112		
E	4.8	4.8
C	0	0
B	4.8	4.8
Q6113		
E	0	0
C	4.8	4.8
B	0	0
Q6121		
G	4.4	4.5
D	2.2	2.2
S	6.7	6.7
Q6131		
G	1.6	1.6
D	5	5
S	6.7	6.7
Q6141		
G	4.3	4.3
D	2.3	2.3
S	6.7	6.7
Q6142		
E	6.7	6.7
C	4.3	4.3
B	0	6.3
Q6143		
E	0	0
C	4.3	4.3
B	0	0
Q6151		
G	2.7	2.7
D	0	0
S	6.7	6.7
Q6152		
1	4.3	4.3
2	4.8	4.9
3	15.4	15.4
4	4.3	4.3
5	-	4.8
6	16	16
Q6153		
1	-6.4	0
2	-6.9	-7
3	-13.8	-16.1
4	-6.4	-14.1
5	-6.8	-6.8
6	-16.1	-16.1
Q6154		
E	0	16
C	12.1	12.1
B	15.4	15.4
Q6155		
E	-14.4	-16.1
C	-6.9	-7
B	-13.8	-15.9
Q6156		
E	15.4	15.4
C	16	16
B	16	16
Q6157		
E	-15.7	-15.4
C	-16.1	-16.2
B	-16.1	-16.1
Q6158		
E	0	0
C	16	16
B	-0.7	-0.7
Q6201		
E	6.7	6.7
C	0	0
B	6.7	6.7
Q6202		
E	0	0
C	6.7	6.7
B	0	0
Q6203		
E	0	0
C	0	0
B	0	0
Q6301		
E	0	0
C	0	0
B	3	3
Q6302		
G	0	0
D	6.4	6.4
S	0	0
Q6303		
G	3	3
D	0	0
S	3.9	0
Q6304		
G	6.7	6.7
D	0	0
S	0	0
Q6305		
G	0	0
D	6.7	6.7
S	6.7	6.7

<MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	0	0
2	0.9	0.9
3	0.9	0.9
4	0	0
5	0.9	0.9
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	4.8	4.8
15	0	0
16	0.5	0.5
17	0	0
18	0.5	0.5
19	0	0
20	0.5	0.5
21	0	0
22	0	0
23	1.5	1.6
24	6.7	6.7
25	0	2.4
26	2.3	2.3
27	2.4	2.4
28	2.4	2.4
29	2.4	2.4
30	2.4	2.4
31	1.5	1.5
32	2.4	2.4
33	2.4	2.4
34	2.4	2.4
35	4.8	4.8
36	3	3
37	0.8	0.8
38	0.6	0.6
39	0.6	0.6
40	1.2	1.2
41	1.6	1.6
42	0.6	0.6
43	4.8	4.8
44	0	0
45	0	0
46	0	0
47	2.4	3
48	0	0
49	3	3
50	2	2
51	0	0
52	1.6	1.6
53	1.1	1.1
54	1.1	0.6
55	0.6	0.6
56	0.6	0.6
57	1	1
58	0.7	0.7
59	0	0
60	1.7	1.7
61	2.7	2.7
62	2.2	2.2
63	0	2.5
64	2.4	2.4
65	2.4	2.5
66	0	2.4
67	1.5	1.5
68	1.6	1.6
69	0	0
70	0.9	0.9
71	1	0.9
72	0.9	0.8
73	1.6	0.9
74	0.4	1.6
75	0	0
76	6.7	0
77	6.7	6.7
78	2.1	2.1
79	0	0
80	0	0
Q1601		
1	0	0
2	0	0
3	4.8	4.8
4	0	0
5	4.8	4.8

<AUDIO AD/DA>

MODE PIN NO.	REC	PLAY
IC2101		
1	3	3
2	3	3
3	1.4	0
4	0	0
5	1.3	0
6	1.4	0
7	0	0
8	0	3
9	1.5	1.6
10	1.5	0
11	1.2	0
12	0.5	0
13	0	0
14	3	3
15	1.4	0
16	3	0
17	0	0
18	3	3
19	1.4	1.4
20	0	1.4
21	1.4	1.4
22	0	0
23	3	3
24	3	3

<AUDIO FADER>

MODE PIN NO.	REC	PLAY
Q2501		
E	-	-
C	-	-
B	-	-
Q2502		
E	-	-
C	-	-
B	-	-
Q2503		
E	-	-
C	-	-
B	-	-
Q2504		
E	-	-
C	-	-
B	-	-
Q2505		
E	-	-
C	-	-
B	-	-
Q2506		
E	-	-
C	-	-
B	-	-
Q2507		
E	-	-
C	-	-
B	-	-
Q2508		
E	-	-
C	-	-
B	-	-
Q2509		
E	-	-
C	-	-
B	-	-

<MAIN AUDIO>

MODE PIN NO.	REC	PLAY
IC2201		
1	1.6	0
2	1.6	0
3	0.7	0
4	1.6	1.7
5	1.6	1.6
6	1.6	1.7
7	0	0
8	2.3	2.4
9	2.3	0
10	0	1.7
11	1.6	1.6
12	1.6	1.7
13	1.6	1.7
14	1.4	0
15	1.6	0
16	1.6	1.7
17	2	1.7
18	1.6	0.9
19	2	0
20	2	0
21	1.6	0
22	1.6	3.1
23	1.6	0
24	1.6	1.7
25	2.3	2.1
26	0.9	0.5
27	2.4	2.2
28	1.6	1.7
29	2.4	2.4
30	2.4	2.1
31	2.4	2.4
32	2.4	2.1
33	5.5	4.8
34	4.7	4.7
35	0	0
36	2.4	2.4
37	4.7	4.7
38	2.4	2.2
39	3	3
40	0	0
41	3	3
42	2.4	2.4
43	2.4	2.1
44	3	3
45	1.6	1.7
46	0	0
47	2.4	2.4
48	1.6	1.7
49	1.6	1.7
50	1.6	1.7
51	1.6	1.7
52	1.6	1.5
53	1.6	1.5
54	2.9	3.1
55	0	0
56	2.2	2.2
57	1.6	1.7
58	1.6	0.5
59	2.9	3.1
60	1.6	0
61	1.8	0
62	1.8	0
63	1.6	1.7
64	1.8	1.7
Q2205		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
Q2206		
E	0	0
C	0	0
B	0	0
Q2401		
E	2.9	3.1
C	4.8	4.8
B	3.6	3.8
Q2402		
E	4.8	4.8
C	6.7	6.7
B	6	6
Q2404		
E	4.2	4.2
C	4.8	4.8
B	4.8	4.8
Q2601		
E	2.2	2.4
C	0	1.8
B	1.6	1.7
Q2602		
E	2.2	2.4
C	1.9	1.8
B	1.6	1.7

<PRE/REC>

MODE PIN NO.	REC	PLAY
IC3501		
1	3	2.3
2	3	1.9
3	3	3
4	0	0
5	0	0
6	0	0
7	2.6	3
8	1.5	1.5
9	1	0.9
10	0	0
11	3	3
12	1.4	1.5
13	3	3
14	3	3
15	2	2
16	0	0
17	-4.6	-4.5
18	8.7	5.5
19	4.8	4.8
20	4.7	1.4
21	0	0.8
22	3	2.2
23	0	0
24	0	0.5
25	3	3
26	0	0
27	0	0
28	-4.3	1.8
29	4.7	0.4
30	4.8	4.8
31	0	0.5
32	-4.5	1.9
33	0	0
34	0	0
35	3	3
36	1.1	1.1
37	0.9	0
38	1.4	2.2
39	0.9	0.8
40	1.4	1.4
41	0	0
42	0	0
43	3	0
44	0	3
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Q3502		
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B	-5.7	0.8
Q3503		
E	0	0
C	0	0
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Q3504		
E	0	0
C	0.7	1.1
B	1.1	0.7
Q3505		
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C	4.7	0.4
B	4.1	4.8
Q3506		
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8	8.6
9	0
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12	1.2
13	8
14	-6.9
Q5002	
E	7.9
C	12.1
B	8.7

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MODE PIN NO.	EE
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D	1.4
S	0

<MONITOR>

MODE PIN NO.	EE
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6	4.5
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12	6.2
13	12.1
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18	6.2
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B	0
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Q7605	
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C	0
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Q7606	
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C	2.3
B	4.4
Q7607	
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C	12.1
B	0
Q7608	
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C	-15.3
B	0
Q7609	
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C	10.4
B	0.8
Q7610	
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Q7615	
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C	3
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Q7616	
E	3
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B	0
Q7617	
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C	4.5
B	0
Q7618	
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C	0
B	3

<B/W VF>

MODE PIN NO.	EE
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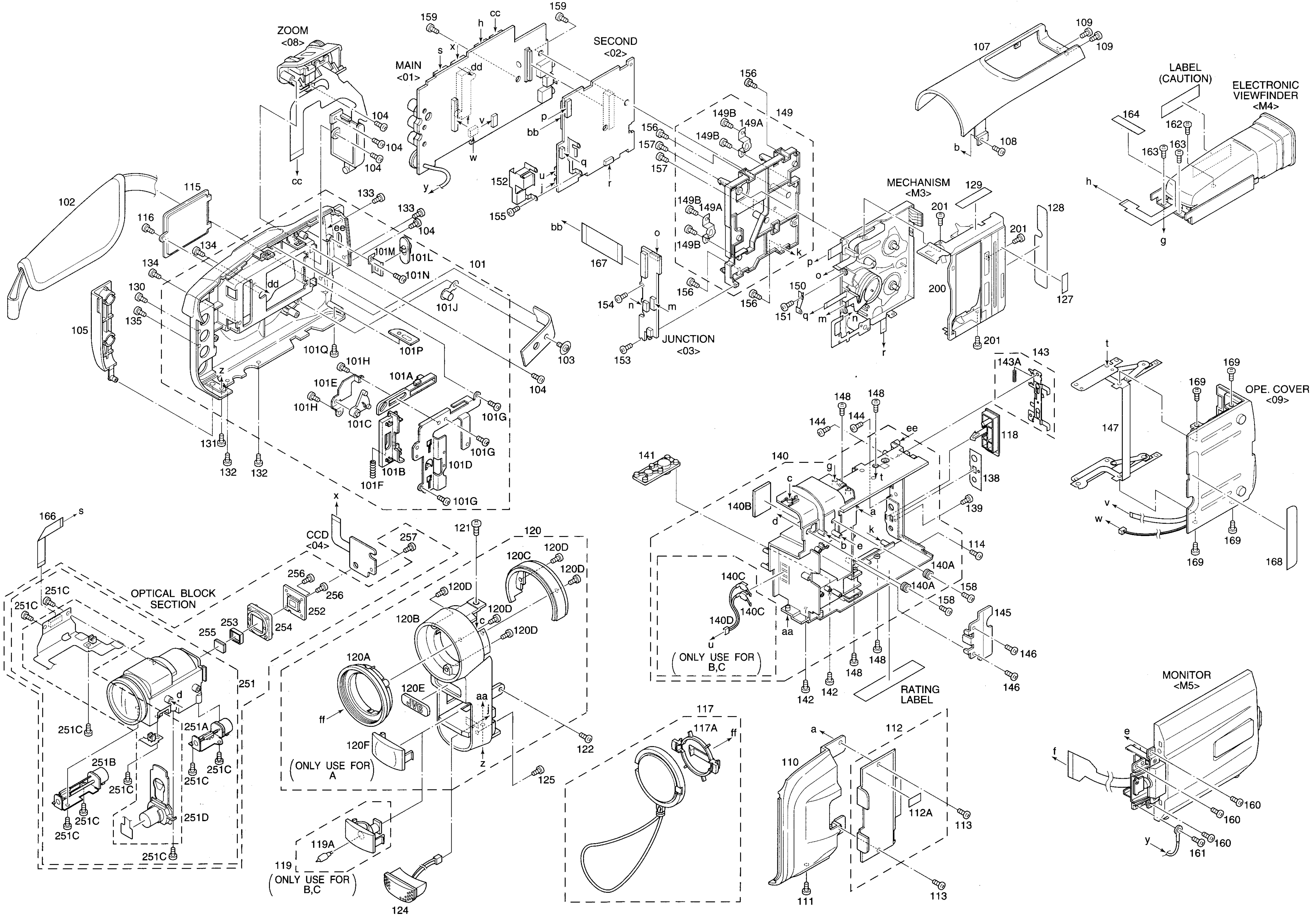
5.2 FINAL ASSEMBLY <M2>



ZOOM
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MAIN
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SECOND
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LABEL
(CAUTION)
ELECTRONIC
VIEWFINDER
<M4>
MECHANISM
<M3>
JUNCTION
<03>
OPE. COVER
<09>
CCD
<04>
OPTICAL BLOCK
SECTION
(ONLY USE FOR
B,C)
(ONLY USE FOR
A)
(ONLY USE FOR
B,C)
RATING
LABEL
MONITOR
<M5>
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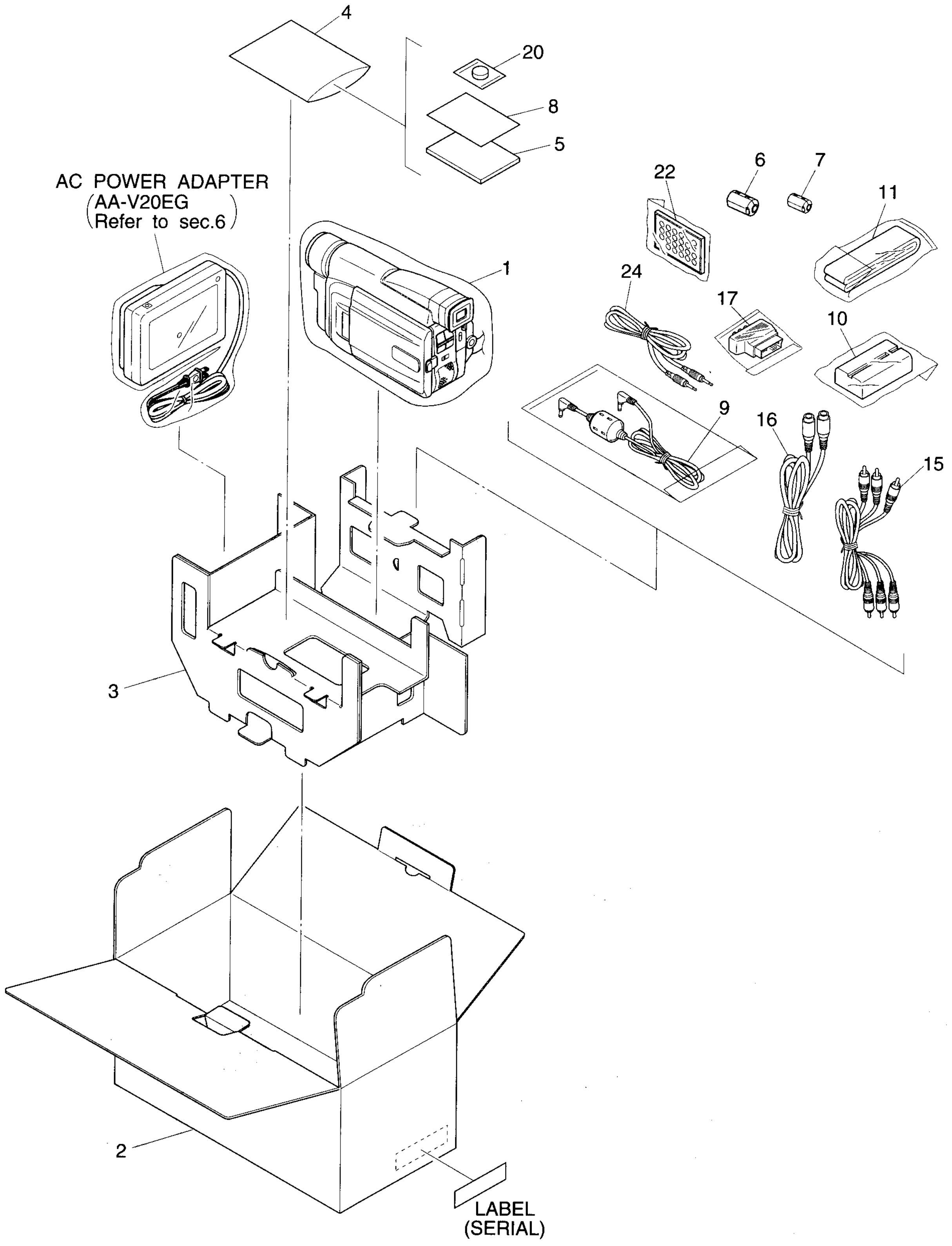
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



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PACKING ASSEMBLY <M1>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	LY30023-015A	POLY BAG
	2	LY31378-001A	PACKING CASE,A
		LY31378-002A	PACKING CASE,B
		LY31378-003A	PACKING CASE,C
	3	LY31380-001A	CUSHION
	4	QPA02003006	POLY BAG
⚠	5	LYT0431-001A	INST.BOOK(EN)
⚠		LYT0431-002A	INST.BOOK(GE)
⚠		LYT0431-003A	INST.BOOK(FR)
⚠		LYT0431-004A	INST.BOOK(DU)
⚠		LYT0431-005A	INST.BOOK(SP)
⚠		LYT0431-006A	INST.BOOK(IT)
⚠		LYT0431-007A	INST.BOOK(DA)
⚠		LYT0431-008A	INST.BOOK(FI)
⚠		LYT0431-009A	INST.BOOK(SW)
⚠		LYT0431-010A	INST.BOOK(NO)
⚠		LYT0431-011A	INST.BOOK(RU)
⚠		LYT0431-012A	INST.BOOK(CZ)
⚠		LYT0431-013A	INST.BOOK(PO)
⚠		LYT0431-014A	INST.BOOK(HU)
	6	QQR0919-002	CORE FILTER for DV CABLE
	7	QQR0855-003	CORE FILTER for EDITING CABLE
	8	BT-54013-1	WARRANTY CARD
	9	QAM0170-001	DC CORD
⚠	10	LY31267-002A	BATT.PACK ASSY
	11	LY20186-001A	SHOULDER STRAP
	15	PEAC0359-150	CABLE ASSY, A/V CABLE
	16	QAM0004-003	S CABLE, S-VIDEO CABLE
	17	PEMC1000-01-02	CONNECTOR, CABLE ADAPTER
⚠	20	PECA0903	LI BATTERY
	22	YQ20922M	REMOTE CONTROLLER
	24	PEAC0428-150	CABLE ASSY, EDITING CABLE

MODEL	MARK
GR-DVL20EG	A
GR-DVL30EG	B
GR-DVL40EG	C

- INSTRUCTIONS
  EN .... ENGLISH
  GE .... GERMANY
  FR .... FRENCH
  DU .... DUTCH
  SP .... SPANISH
  IT .... ITALIAN
  DA .... DANISH
  FI .... FINNISH
  SW .... SWEDISH
  NO .... NORWEGIAN
  RU .... RUSSIAN
  CZ .... CZECH
  PO .... POLISH
  HU .... HUNGARIAN

****

FINAL ASSEMBLY <M2>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	101	LY10173-002A	LOWER CASE ASSY
	101A	LY31214-001A	KNOB(B.RELEASE)
	101B	LY31261-001A	LOCK(B.RELEASE)
	101C	LY41545-001C	CAM(B.RELEASE)
	101D	LY20473-001A	BKT(B.RELEASE)
	101E	LY31215-001A	HOLD(B.RELEASE)
	101F	LY30002-033A	COMPRES. SPRING
	101G	QYSLSF2060Z	SCREW,X3
	101H	QYSLSP2030Z	SCREW,X2
	101J	LY40081-001A	CAP
	101L	LY41530-001A	KNOB(C.DOOR)
	101M	LY41531-001A	BRACKET(KNOB)
	101N	QYSLSF2040Z	SCREW
	101P	LY41791-001A	BRACKET
	101Q	QYSLSP2040D	SCREW
	102	LY20476-001A	GRIP BELT
	103	LY30018-003A	SPECIAL SCREW
	104	QYSLSF2055D	SPECIAL SCREW,X5
	105	LY31217-001B	CAP(RCA)
	107	LY20461-004A	TOP COVER,A
		LY20461-005A	TOP COVER,B
		LY20461-006A	TOP COVER,C
	108	QYSLSF2055D	SPECIAL SCREW
	109	LY30018-084A	SPECIAL SCREW,X2
	110	LY10177-001A	UPPER CASE(1),A
		LY10177-002A	UPPER CASE(1),B,C
	111	QYSLSF2055D	SPECIAL SCREW
	112	LY20510-001A	UPPER CASE(2)ASSY,A
		LY20510-002A	UPPER CASE(2)ASSY,B,C
	112A	LY30016-0Y4A	SPACER-A
	113	QYSLSF2055D	SPECIAL SCREW,X2
	114	LY30018-084A	SPECIAL SCREW
⚠	115	LY31219-001A	CAP(JIG CONN)
	116	QYSLSP2030D	SCREW
	117	LY41538-001B	CAP(HOOD)ASSY
	117A	LY31224-001B	SPRING
	118	LY31218-001B	CAP(REAR JACK)
	119	LY30860-001B	DC LIGHT ASSY,B,C
	119A	YQ44266	LAMP,B,C
	120	LY10178-003A	FRONT COVER ASSY,A
⚠		LY10178-004A	FRONT COVER ASSY,B,C
	120A	LY31220-001B	HOOD(1),A
		LY31220-002A	HOOD(1),B,C
	120B	LY31221-002A	HOOD(2),A
		LY31221-003A	HOOD(2),B,C
	120C	LY31222-001B	HOOD(3)
	120D	QYSLSF2060Z	SCREW,X5
	120E	LY41381-001A	MARK
	120F	LY30934-008A	COVER(LIGHT),A
	121	YQ43762-5	SPECIAL SCREW
	122	QYSLSF2055D	SPECIAL SCREW
	124	LY30861-006A	MICROPHONE,A
		LY30861-007A	MICROPHONE,B,C
	125	QYSLSF2055D	SPECIAL SCREW
	127	LY40699-002A	LABEL(PUSH)
	128	LY40698-002A	LABEL(HOUSING)
	129	LY30016-0Y7A	SPACER-A
	130	QYSLSF2090D	SCREW

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	131	QYSLSF2055D	SPECIAL SCREW
	132	LY30018-084A	SPECIAL SCREW,X2
	133	QYSLSF2055D	SPECIAL SCREW,X2
	134	QYSLSF2055D	SPECIAL SCREW,X2
	135	QYSLSF2055D	SPECIAL SCREW
	138	LY41609-003B	PLATE
	139	LY30018-044A	SPECIAL SCREW
⚠	140	LY10180-001B	FRAME ASSY,B,C
⚠		LY10180-002B	FRAME ASSY,A
	140A	LY41082-001A	CUSHION(OP),X2
	140B	LY30016-0H2A	SPACER-A
	140C	YQ43810-1-1	CONTACT(LIGHT),X2,B,C
	140D	WJM0003-004A	E-SI C WIRE C-F,B,C
	141	LY31019-001A	BASE
	142	LY30018-084A	SPECIAL SCREW,X2
	143	LY41534-001B	LOCK ASSY
	143A	LY30002-038A	COMPRES. SPRING
	144	QYSLSP2035Z	SCREW,X2
	145	LY31287-001A	BRACKET(UP)
	146	QYSLSF2055D	SPECIAL SCREW,X2
	147	LY31227-001B	ARM ASSY
	148	LY30018-042A	SPECIAL SCREW,X4
	149	LY31226-001B	HOLDER(M)ASSY
	149A	LY41085-001B	BKT(MECHA),X2
	149B	QYSLSF2040Z	SCREW,X4
	150	LY40709-001C	BRACKET(GRD)
	151	YQ43893-4	MINI SCREW
	152	LY31229-001A	SHIELD CASE
	153	LY30018-024A	SPECIAL SCREW
	154	YQ43893-3	MINI SCREW
	155	YQ43893-3	MINI SCREW
	156	QYSLSF2055D	SPECIAL SCREW,X4
	157	LY30019-014A	SPECIAL SCREW,X2
	158	LY30018-050A	SPECIAL SCREW,X2
	159	QYSLSF2055D	SPECIAL SCREW,X2
	160	QYSLSF2055D	SPECIAL SCREW,X3
	161	QYSLSF2055D	SPECIAL SCREW
	162	LY30018-089A	SPECIAL SCREW
	163	QYSLSF2055D	SPECIAL SCREW,X2
	164	LY30016-0Y3A	SPACER-A
	166	WJT0011-002A	E-CARD WIRE, OP-MAIN CN107
	167	QUQ105-35X3AA	FFC WIRE, SECOND CN401-JUNCTION CN501
	168	LY41672-001A	SHEET,A
		LY41672-002A	SHEET,B,C
	169	LY30018-008A	SPECIAL SCREW,X4
	200	LY30483-001N	CASSETTE HOUSING ASSY
	201	YQ43893-4	MINI SCREW,X3

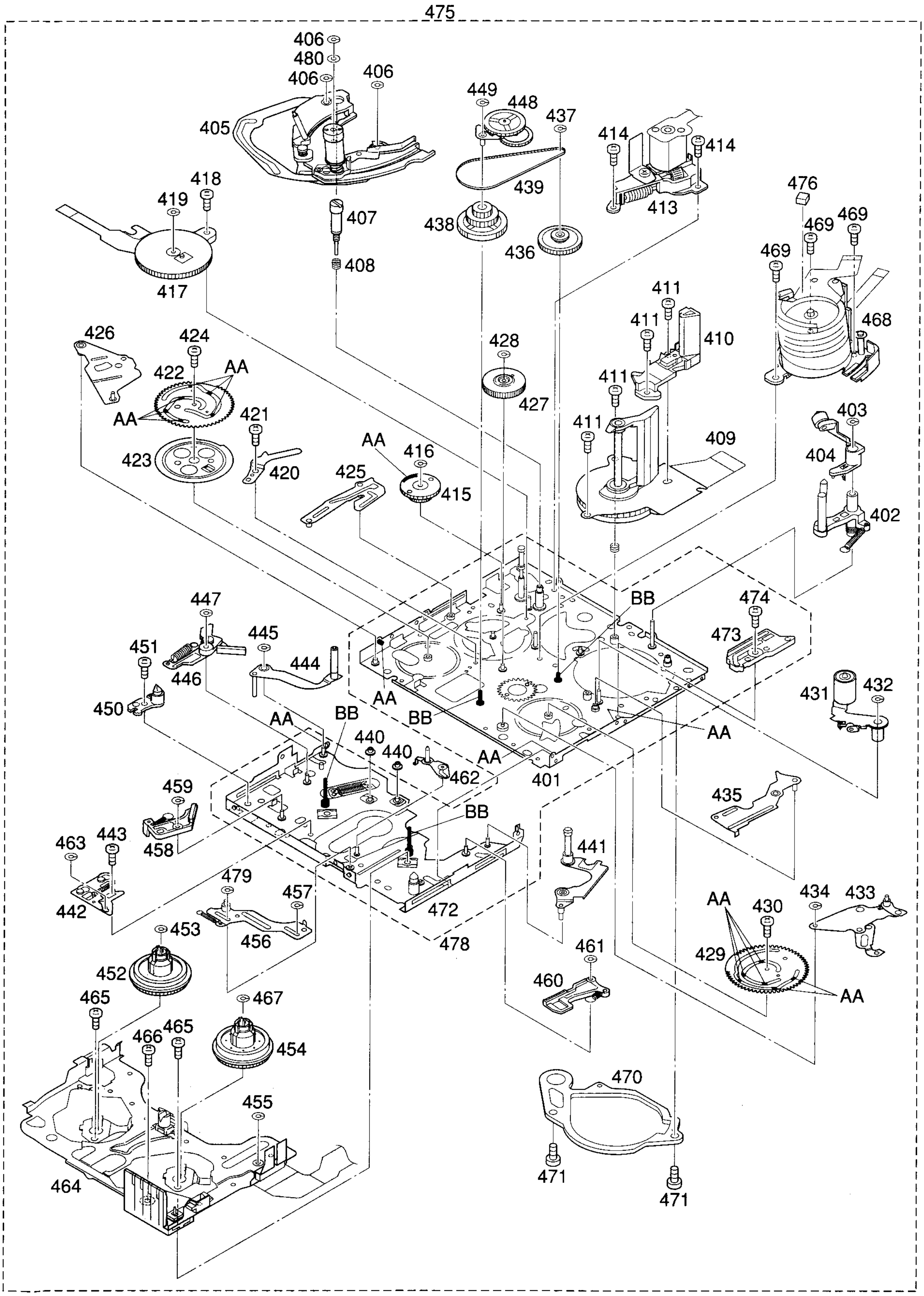
– OPTICAL BLOCK SECTION –

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	251	LY30948-003A	OP BLOCK ASSY
	251A	PTY30948-002	FOCUS MOTOR
	251B	PTY30948-301A	ZOOM MOTOR
	251C	PTY30151-016	SCREW,X9
	251D	PTY30948-006	IRIS MOTOR UNIT,INCL.FPC
	252	LYH40039-002A	CCD BASE ASSY
	253	LY31370-001A	SPACER RUBBER
	254	LY20497-001A	CCD SPACER
	255	LY41718-001A	OPTICAL LPF
	256	QYSPSGU2080Z	SCREW,X2
	257	LY30018-072A	SPECIAL SCREW

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.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Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

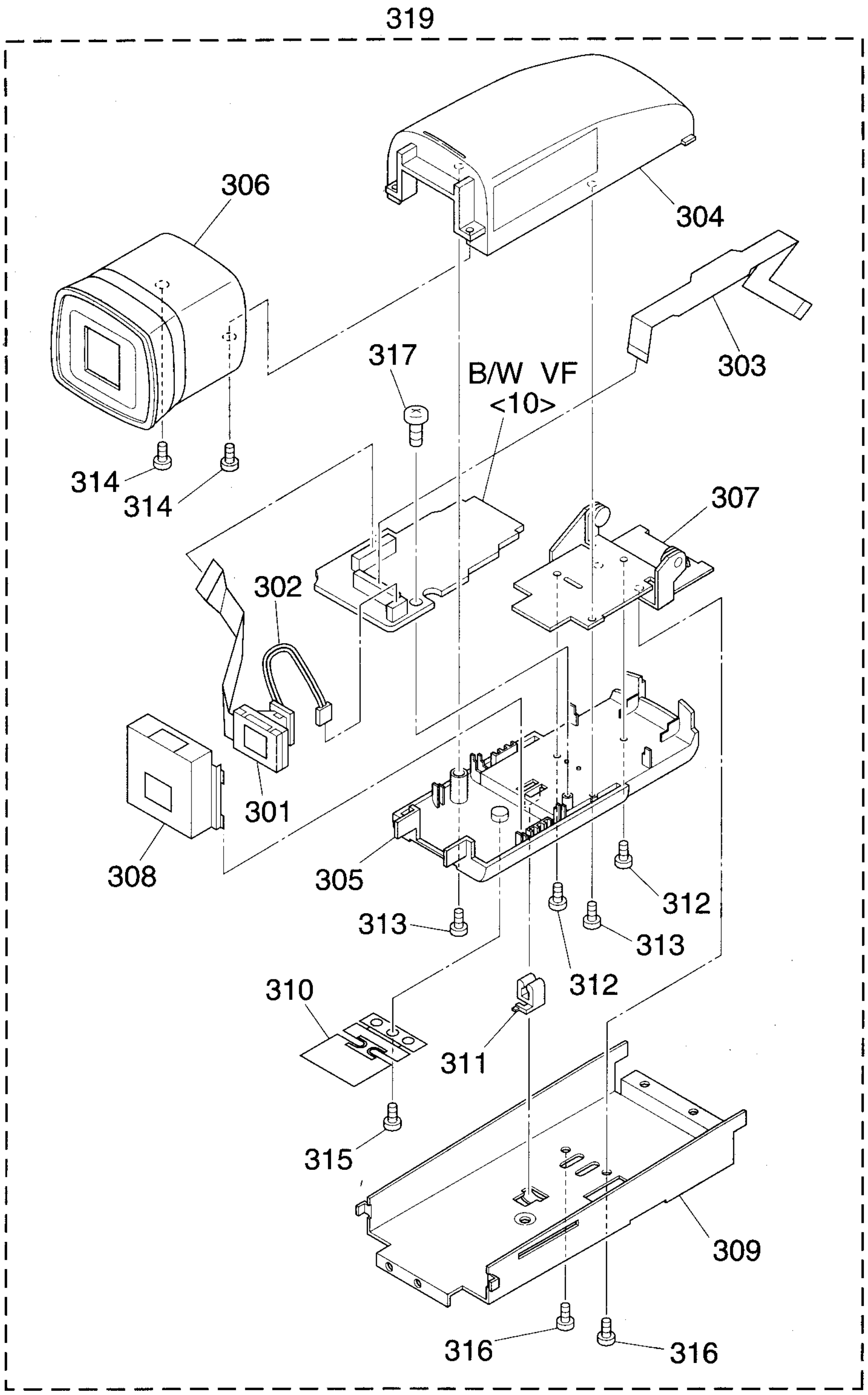
NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

****

MECHANISM ASSEMBLY <M3>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	LY10077-001J	MAIN DECK ASSY
402	LY30436-001G	SLANT POLE ARM ASSY
403	YQ44246	SLIT WASHER
404	LY30438-001B	CLEANER ARM ASSY
405	LY10080-001S	RAIL ASSY
406	YQ44246	SLIT WASHER,X3
407	LY40353-001D	GUIDE ROLLER(S)ASSY
408	LY30002-006C	COMPRES. SPRING
409	QAR0026-001	CAPSTAN MOTOR
410	LY30504-001C	CATCHER(T)ASSY
411	YQ43893	MINI SCREW,X4
413	LY30448-001C	MOTOR BKT ASSY
414	YQ43893	MINI SCREW,X2
415	LY30449-001C	WORM WHEEL
416	YQ44246	SLIT WASHER
417	LY40496-001C	ROTARY ENCODER
418	YQ43893	MINI SCREW
419	YQ44246	SLIT WASHER
420	LY40614-001B	GEAR HOLDER
421	YQ43893	MINI SCREW
422	LY30450-001C	MAIN CAM
423	LY30840-001A	BRAKE CTL PLATE
424	YQ43893	MINI SCREW
425	LY40373-001C	TC LEVER ASSY
426	LY30452-001E	SLIDE LEVER ASSY
427	LY30454-001A	CONNECT GEAR
428	YQ44246	SLIT WASHER
429	LY30455-001B	SUB CAM
430	YQ43893	MINI SCREW
431	LY30456-001B	PINCHROLLER ARM ASSY
432	YQ44246	SLIT WASHER
433	LY30459-001A	CHARGE ARM ASSY
434	YQ44246	SLIT WASHER
435	LY40387-001B	BC LEVER ASSY
436	LY40389-001D	R.D.PULLEY ASSY
437	YQ44246-2	SLIT WASHER
438	LY40391-001E	CENTER GEAR ASSY
439	LY40396-001A	TIMING BELT
440	LY40413-001A	COLLAR,X2
441	LY30468-001D	GUIDE ARM ASSY
442	LY30618-001C	SLIDE GUIDE PLATE ASSY
443	YQ43893-2	MINI SCREW
444	LY40420-001J	TENSION ARM ASSY
445	YQ44246	SLIT WASHER
446	LY30471-001D	PAD ARM ASSY
447	YQ44246	SLIT WASHER
448	LY40432-001E	IDLER ARM ASSY
449	YQ44246-2	SLIT WASHER
450	LY30476-001A	GUIDE PIN(SUPPLY)
451	YQ43893	MINI SCREW
452	LY40441-001B	REEL DISK(SUPPLY)ASSY
453	YQ44246	SLIT WASHER
454	LY40443-001B	REEL DISK(TAKE-UP)ASSY
455	YQ44246	SLIT WASHER
456	LY30477-001D	CTL PLATE ASSY
457	YQ44246	SLIT WASHER
458	LY40444-001E	LOADING BRAKE ASSY
459	YQ44246	SLIT WASHER
460	LY40452-001A	SUB BRAKE ASSY
461	YQ44246	SLIT WASHER
462	LY30479-001B	RELEASE GUIDE ASSY
463	YQ44246	SLIT WASHER
464	LY20146-001G	REEL COVER ASSY
465	YQ43893-4	MINI SCREW,X2
466	YQ43893	MINI SCREW
467	YQ44246	SLIT WASHER
468	YDV2086I	DRUM ASSY
469	YQ43893	MINI SCREW,X3
470	LY20138-001C	PWB HOLDER
471	YQ43893	MINI SCREW,X2
472	LY10082-001H	SLIDE DECK ASSY
473	LY30462-001B	LOADING GUIDE
474	YQ43893	MINI SCREW
475	YMA0025F	MECHA(A)ASSY
476	LY30016-0M1A	SPACER-A
478	LY30496-001N	DECK ASSY
479	LY41674-001A	SLIT WASHER
480	LY41573-001A	WASHER

5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4> [GR-DVL20EG/DVL30EG]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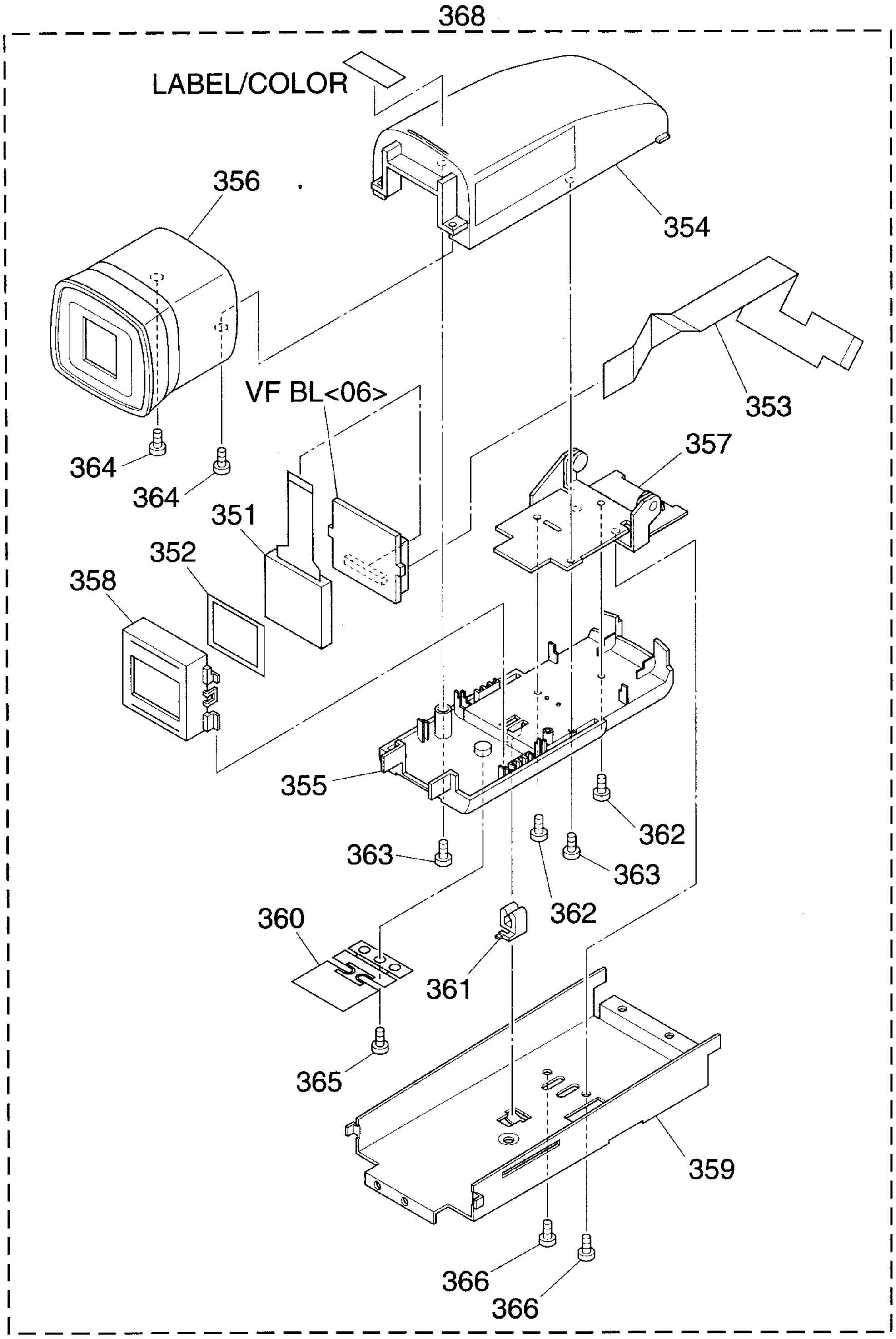
# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
			********************************
			ELECTRONIC VIEWFINDER ASSEMBLY <M4>
	301	QLD0097-001	LCD MODULE
	302	QLL0067-001	BACK LIGHT
	303	QAL0198-002	FPC
⚠	304	LY31265-001A	VF CASE(U)ASSY,A
⚠		LY31265-002A	VF CASE(U)ASSY,B
⚠	305	LY20464-001A	VF CASE(LOWER)
	306	LY20465-002A	EYE P.ASSY
	307	LY31230-001A	HINGE(VF)ASSY
	308	LY20481-001A	HOLDER(B/W LCD)
	309	LY31232-001A	BRACKET(VF)
	310	LY31250-001A	CAP
	311	LY40692-002A	CLIP(MONITOR)
	312	LY30018-038A	SPECIAL SCREW,X2
	313	LY30018-079A	SPECIAL SCREW,X2
	314	LY30018-079A	SPECIAL SCREW,X2
	315	LY30018-063A	SPECIAL SCREW
	316	LY41599-001A	SPECIAL SCREW,X2
	317	LY30018-023A	SPECIAL SCREW
⚠	319	LYH20094-003B	EVF ASSY,A
⚠		LYH20094-004B	EVF ASSY,B

5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4> [GR-DVL40EG]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LABEL/COLOR
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353
VF BL<06>
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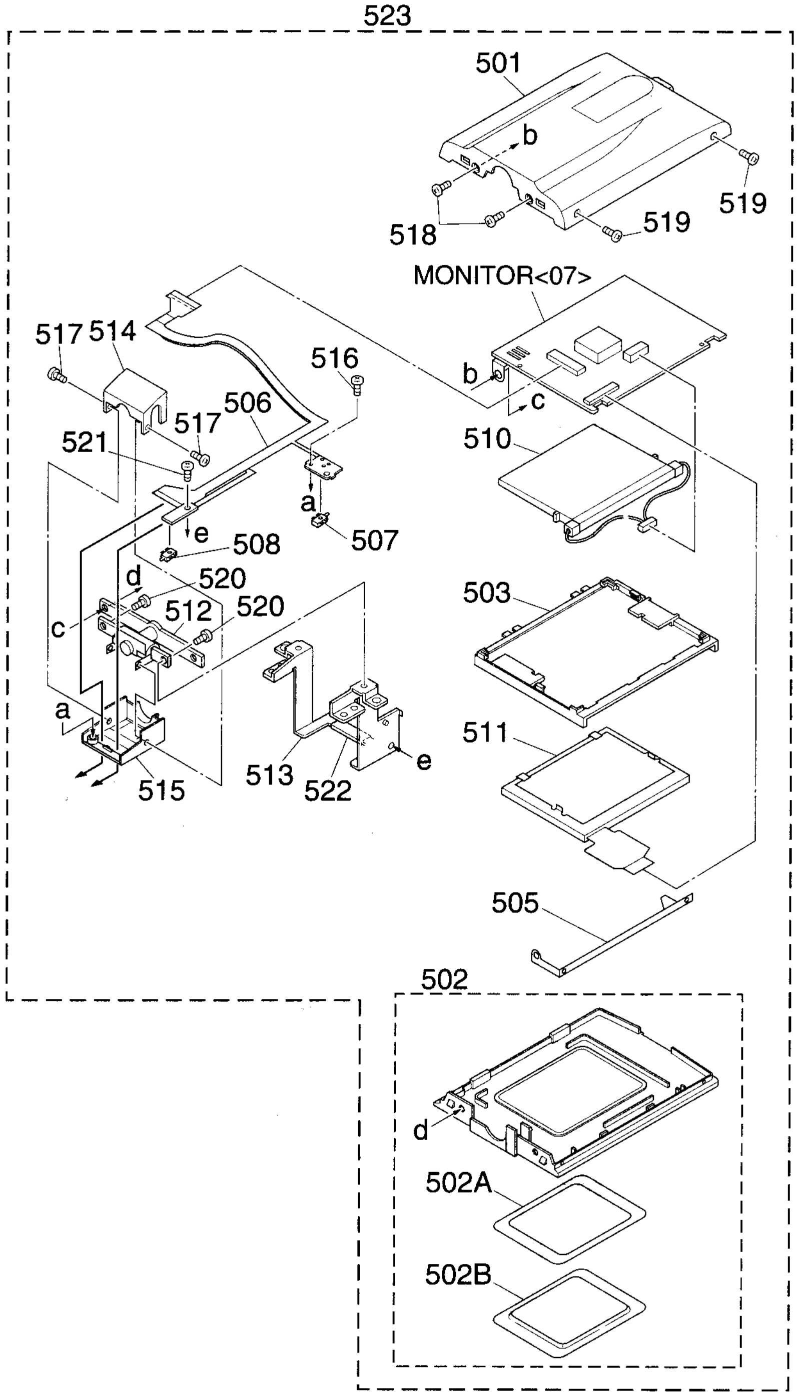
ELECTRONIC VIEWFINDER ASSEMBLY <M4>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	351	QLD0056-001	LCD MODULE
	352	LY40127-001A	SPACER(LCD.)
	353	QAL0197-002	FPC
⚠	354	LY31265-003A	VF CASE(U)ASSY
⚠	355	LY20464-001A	VF CASE(LOWER)
	356	LY20465-001A	EYE P.ASSY
	357	LY31230-001A	HINGE(VF) ASSY
	358	LY20466-001A	HOLDER(LCD)
	359	LY31232-001A	BRACKET(VF)
	360	LY31250-001A	CAP
	361	LY40692-002A	CLIP(MONITOR)
	362	LY30018-038A	SPECIAL SCREW,X2
	363	LY30018-079A	SPECIAL SCREW,X2
	364	LY30018-079A	SPECIAL SCREW,X2
	365	LY30018-063A	SPECIAL SCREW
	366	LY41599-001A	SPECIAL SCREW,X2
⚠	368	LYH20094-005A	EVF ASSY

5.5 MONITOR ASSEMBLY <M5> [GR-DVL20EG]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MONITOR<07>
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507
503
d
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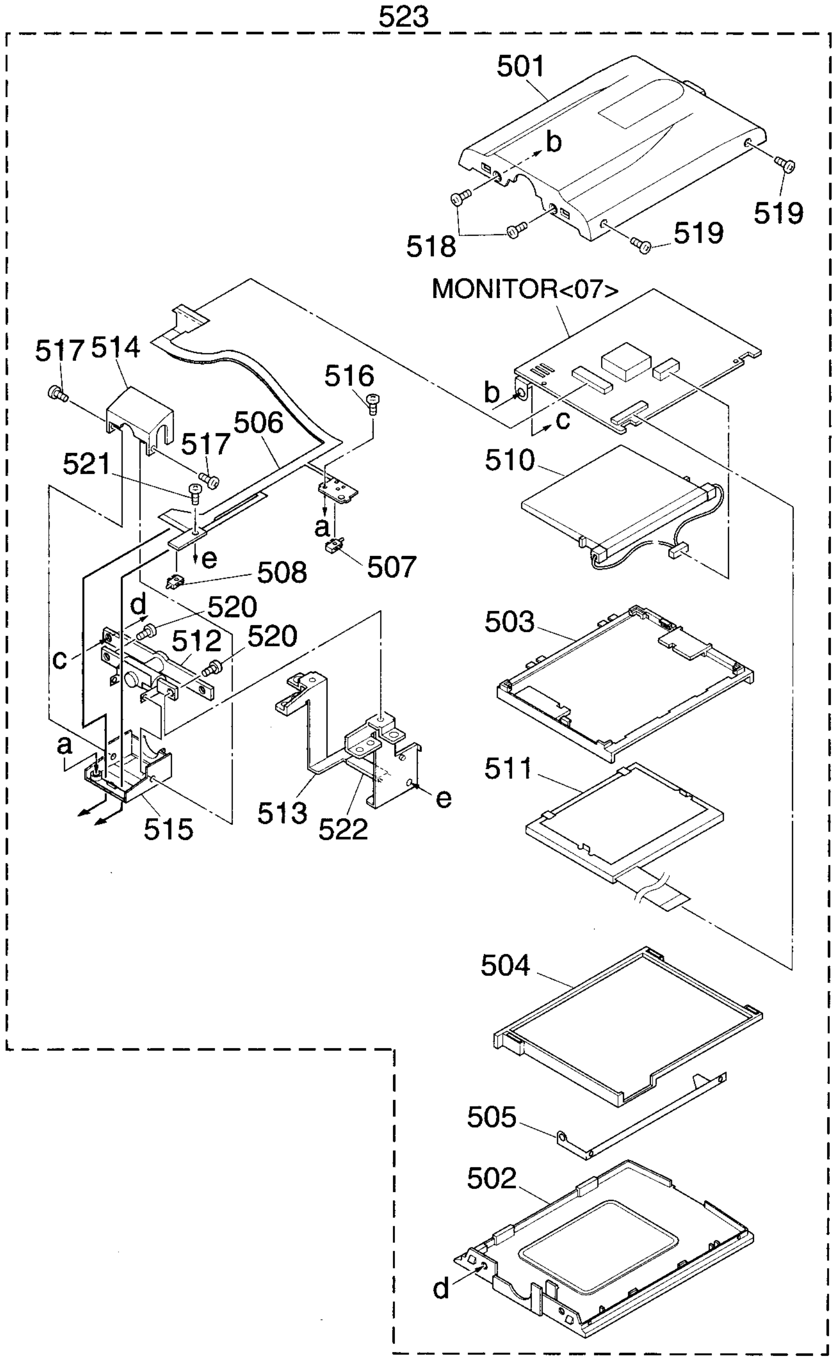
512
520
c
511
a
515
513
522
e
505
502
d
502A
502B

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
******************************			
		MONITOR ASSEMBLY <M5>	
⚠	501	LY20467-002A	M.COVER ASSY
	502	LY20475-002B	M.CASE(2.5)ASSY
	502A	LY41539-001A	SHEET
	502B	LY31290-001A	WINDOW(2.5)
	503	LY20474-001A	HOLDER(PWB2.5)
	505	LY31235-001A	BRACKET(EARTH)
	506	QAL0199-002	FPC
	507	NSW0007-001X	PUSH SWITCH
	508	NSW0122-001X	DETECT SWITCH
	510	QLL0066-001	BACK LIGHT
	511	QLD0082-001	LCD MODULE
	512	LY31236-001A	HINGE ASSY
	513	LY31237-001A	BRACKET
	514	LY31238-001A	HINGE COVER(1)
	515	LY31239-001A	HINGE COVER(2)
	516	QYSPSGT1735Z	SCREW
	517	LY30018-058A	SPECIAL SCREW,X2
	518	QYSLSP2040D	SCREW,X2
	519	QYSPSPT1750D	SCREW,X2
	520	LY30018-090A	SPECIAL SCREW,X2
	521	LY30018-038A	SPECIAL SCREW
	522	LY30016-0V9A	SPACER-A
⚠	523	LYH20093-003A	MONITOR ASSY

5.5 MONITOR ASSEMBLY <M5> [GR-DVL30EG/DVL40EG]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MONITOR<07>
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c
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d
520
503
512
520
c
a
511
515
513
522
e
504
505
502
d

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
******************************			
			MONITOR ASSEMBLY <M5>
⚠	501	LY20467-003A	M.COVER ASSY
	502	LY10184-001A	MONITOR CASE,C
		LY10184-003A	MONITOR CASE,B
	503	LY20468-001A	HOLDER(PWB),C
		LY20474-001A	HOLDER(PWB2.5),B
	504	LY20484-001A	HOLDER(LCD),B
	505	LY31235-001A	BRACKET(EARTH)
	506	QAL0199-002	FPC
	507	NSW0007-001X	PUSH SWITCH
	508	NSW0122-001X	DETECT SWITCH
	510	QLL0064-001	BACK LIGHT,C
		QLL0065-001	BACK LIGHT,B
	511	QLD0047-001	LCD MODULE,B
		QLD0096-002	LCD MODULE,C
	512	LY31236-001A	HINGE ASSY
	513	LY31237-001A	BRACKET
	514	LY31238-002A	HINGE COVER(1)
	515	LY31239-001A	HINGE COVER(2)
	516	QYSPSGT1735Z	SCREW
	517	LY30018-058A	SPECIAL SCREW,X2
	518	QYSLSP2040D	SCREW,X2
	519	QYSPSPT1750D	SCREW,X2
	520	LY30018-090A	SPECIAL SCREW,X2
	521	LY30018-038A	SPECIAL SCREW
	522	LY30016-0V9A	SPACER-A
⚠	523	LYH20093-004A	MONITOR ASSY,B
⚠		LYH20093-005A	MONITOR ASSY,C

5.6 ELECTRICAL PARTS LIST

MODEL	MARK
GR-DVL20EG	A
GR-DVL30EG	B
GR-DVL40EG	C

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MAIN BOARD ASSEMBLY <01>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PW	YB10260DD-02	MAIN BOARD ASSY,A
	YB10260EE-02	MAIN BOARD ASSY,B
	YB10260FF-02	MAIN BOARD ASSY,C
IC501	MAX3221CAE	IC
IC502	TC7S08FU	IC(DIGITAL)
IC503	TC7W00FU	IC(DIGITAL)
IC1001	MN102F1617HL-E1	IC(MICRO C ROM)
	or MN1021617FL	IC(MICRO C ROM)
IC1002	UPD6466GS-535-X	IC(MICRO C ROM)
IC1003	NM25C160LZEM8	IC
	or AT25080N-10SC-X	IC
IC1004	RS5C314	IC
IC1005	PIC-26043S	IR DETECT UNIT
IC1006	TC7W00FU	IC(DIGITAL)
IC1007	TC7W32FK	IC
IC1008	TC7W08FU	IC(DIGITAL)
IC1009	S-81330HG-KB-X	IC
IC1010	IC-PST9323U-X	IC
IC1011	BA10358F-XE	IC
IC1401	YQ44833A	CSP IC ASSY
IC1402	TC7W14FU	IC(DIGITAL)
IC1404	TC74HC4066AFT	IC(DIGITAL)
IC1405	TC4W66FU	IC(DIGITAL)
IC3001	JCY0106-2	IC
IC3002	M51V18165D50TSK	IC(DIGITAL)
IC3004	TK11218BMC	IC
IC3005	SN74AHC1G04K	IC
IC3007	TC7SL00FU	IC(DIGITAL)
IC3101	PDI1394P11ABD	IC
IC3201	JCY0107QP	IC
IC3203	TLC2940IPW	IC
IC3301	JCY0108	IC
IC3401	MB88345PF	IC
IC3701	NJM2538V	IC
IC3703	S-81235SG-QI-X	IC
IC4301	JCY0113-2	IC(DIGITAL)
IC4302	MSM548331TA	IC(DIGITAL)
IC4801	BA10324AF-XE	IC
IC4802	UPC358G2/5/-W	IC
IC4851	UPD16835G3	IC
IC5501	JCY0117	IC
IC5601	HD49323AF	IC
IC5602	MM1385HN	IC
IC6001	FA3675F	IC
IC6301	S-80842ANNP-W	IC
IC7801	TC7SET02FU	IC(DIGITAL),C
IC7802	TC7SET08FU	IC(DIGITAL),C
IC7803	MM1385BN	IC
IC7804	NJM2535V	IC,A,B
Q501	2SC4617/QR/-X	TRANSISTOR
Q502	2SC4617/QR/-X	TRANSISTOR
Q1001	DTC143XE	TRANSISTOR
Q1002	DTA144EE	TRANSISTOR
Q1005	ST-305R4	PHOTO TRANSISTOR
	or RPM-22PB	PHOTO TRANSISTOR
Q1008	DTC143XE	TRANSISTOR
Q1401	DTA114EE	TRANSISTOR
Q1402	DTC114EE	TRANSISTOR
Q1403	DTC114EE	TRANSISTOR
Q1404	DTA114EE	TRANSISTOR
Q1405	DTA114EE	TRANSISTOR
Q3701	DTC144EE	TRANSISTOR
Q4301	2SA1832/YG/-X	TRANSISTOR
Q4302	2SA1832/YG/-X	TRANSISTOR
Q4303	2SC4738/YG/-X	TRANSISTOR
Q4304	2SA1832/YG/-X	TRANSISTOR
Q4305	2SA1832/YG/-X	TRANSISTOR
Q4306	2SA1832/YG/-X	TRANSISTOR
Q4307	2SA1832/YG/-X	TRANSISTOR
Q4308	2SA1832/YG/-X	TRANSISTOR
Q4309	2SA1832/YG/-X	TRANSISTOR
Q4310	DTC143ZE	TRANSISTOR
Q4801	2SC4617/QRS/-X	TRANSISTOR
Q4851	2SC4617/RS/-X	TRANSISTOR
Q6101	CPH3304	MOS FET
Q6111	CPH3304	MOS FET
Q6112	2SB1121/ST/-X	TRANSISTOR
	or 2SB1188(QR)	TRANSISTOR
Q6113	2SC4617/QR/-X	TRANSISTOR
	or 2SC4738/YG/-X	TRANSISTOR
Q6121	CPH3304	MOS FET
Q6131	CPH3304	MOS FET
Q6141	CPH3304	MOS FET
Q6142	2SA1774/QR/-X	TRANSISTOR
	or 2SA1832/YG/-X	TRANSISTOR
Q6143	2SC4617/QR/-X	TRANSISTOR
	or 2SC4738/YG/-X	TRANSISTOR
Q6151	CPH3304	MOS FET
Q6152	HN1C01FU/G/-X	PAIR TRANSISTOR
Q6153	HN1A01FU/G/-X	PAIR TRANSISTOR
Q6154	2SA1577/QR/-X	TRANSISTOR
Q6155	2SC4617/QR/-X	TRANSISTOR
Q6156	2SC4617/QR/-X	TRANSISTOR,A
	or 2SC4738/YG/-X	TRANSISTOR,A
Q6157	2SA1774/QR/-X	TRANSISTOR
	or 2SA1832/YG/-X	TRANSISTOR
Q6158	DTC144EE	TRANSISTOR
	or RN1104	TRANSISTOR
Q6201	2SA1774/QR/-X	TRANSISTOR,B,C
	or 2SA1832/YG/-X	TRANSISTOR,B,C
Q6202	2SD1628/FG/-X	TRANSISTOR,B,C
Q6203	2SC4617/QR/-X	TRANSISTOR,B,C
	or 2SC4738/YG/-X	TRANSISTOR,B,C
Q6301	DTC144EE	TRANSISTOR
	or RN1104	TRANSISTOR
Q6302	2SK1830	MOS FET
Q6303	2SJ347	MOS FET
Q6304	2SK1830	MOS FET
Q6305	2SJ501	MOS FET
Q7801	UMZ1N	PAIR TRANSISTOR,C
D501	MA8068	ZENER DIODE
D502	MA8068	ZENER DIODE
D503	MA8068	ZENER DIODE
D504	MA8068	ZENER DIODE
D505	MA8068	ZENER DIODE
D506	MA8068	ZENER DIODE
D507	1SS355	DIODE
D508	1SS355	DIODE

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D509	1SS355	DIODE	
	D510	MA8068	ZENER DIODE	
⚠	D1001	RB715F	SB DIODE	
	D1002	DAN222	DIODE	
	D3701	MA8068	ZENER DIODE	
	D3702	MA8068	ZENER DIODE	
	D3703	MA8068	ZENER DIODE	
	D5501	1SS355	DIODE	
	D6101	U1FWJ44N	SB DIODE	
	D6111	U1FWJ44N	SB DIODE	
	D6121	U1FWJ44N	SB DIODE	
	D6131	U1FWJ44N	SB DIODE	
	D6141	U1FWJ44N	SB DIODE	
	D6142	1SS355	DIODE	
	D6143	1SS355	DIODE	
	D6151	1SS357	SB DIODE	
	D6152	1SS357	SB DIODE	
	D6153	1SS357	SB DIODE	
	D6154	1SS357	SB DIODE	
	D6155	MA8091/L/-X	ZENER DIODE	
	R501	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R502	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R503	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R504	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R505	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R506	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R507	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R508	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R509	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R510	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R513	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R514	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1001	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1003	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1004	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
⚠	R1005	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1006	NRVA63D-823X	CMF RESISTOR	82kΩ,1/16W
	R1007	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1008	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1009	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
	R1010	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1011	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1012	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1013	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1014	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1015	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1017	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1018	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1019	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1020	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R1021	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1022	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1023	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
	R1025	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1026	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1027	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R1028	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
	R1029	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1031	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
	R1032	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1033	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R1034	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1035	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1036	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R1037	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1038	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1039	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1040	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1041	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1042	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
	R1043	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R1044	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R1045	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R1047	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
	R1048	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
	R1049	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R1050	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1051	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1052	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1053	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1054	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
	R1055	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R1056	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R1057	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
	R1058	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1060	NRSA63J-224X	MG RESISTOR	220kΩ,1/16W
	R1062	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1063	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
	R1064	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1065	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1406	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1407	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R1408	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R1410	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R1412	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R1413	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R1414	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1415	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1420	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R1421	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R1422	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R1424	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R1427	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1428	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1429	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1430	NRSA63J-753X	MG RESISTOR	75kΩ,1/16W
	R1431	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
	R1432	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R1433	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1434	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R1435	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1438	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1439	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1444	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1445	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1446	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1447	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R1450	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1451	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1452	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1453	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
	R1458	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1459	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1460	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R1461	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1464	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R1465	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1466	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1467	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1468	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1469	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R1470	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R1471	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1472	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1474	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1476	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1477	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2151	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R2152	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3002	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3005	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R3007	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3008	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
R3010	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3032	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3048	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3050	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3051	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3052	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3054	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R3056	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3057	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3058	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3059	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3060	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3061	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3062	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R3063	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R3101	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R3102	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3103	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R3105	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R3106	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R3113	NRSA63J-394X	MG RESISTOR	390kΩ,1/16W
R3115	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R3117	NRSA63J-560X	MG RESISTOR	56Ω,1/16W
R3118	NRSA63J-560X	MG RESISTOR	56Ω,1/16W
R3119	NRSA63J-560X	MG RESISTOR	56Ω,1/16W
R3120	NRSA63J-560X	MG RESISTOR	56Ω,1/16W
R3121	NRSA63J-512X	MG RESISTOR	5.1kΩ,1/16W
R3128	NRSA63J-512X	MG RESISTOR	5.1kΩ,1/16W
R3201	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3202	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3211	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3212	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3213	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3214	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3215	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3221	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R3224	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3233	NRVA63D-302X	CMF RESISTOR	3kΩ,1/16W
R3234	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3237	NRVA63D-622X	CMF RESISTOR	6.2kΩ,1/16W
R3303	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3304	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3307	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3308	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3312	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3313	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3315	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R3316	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3317	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3318	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3330	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3331	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3332	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R3333	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R3334	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3335	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3336	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3337	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3338	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3339	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3341	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R3342	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3343	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3344	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R3345	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3346	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3347	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3348	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R3349	NRVA63D-333X	CMF RESISTOR	33kΩ,1/16W
R3350	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
R3351	NRVA63D-121X	CMF RESISTOR	120Ω,1/16W
R3357	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3361	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3362	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3363	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3364	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3366	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R3367	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3379	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R3380	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R3703	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3704	NRSA63J-224X	MG RESISTOR	220kΩ,1/16W
R3705	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3706	NRSA63J-225X	MG RESISTOR	2.2MΩ,1/16W
R3707	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3708	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3712	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3713	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3732	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R3733	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R3734	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R4303	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4304	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R4305	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R4306	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4307	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R4308	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R4309	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
R4310	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4311	NRVA63D-472X	CMF RESISTOR	4.7kΩ,1/16W
R4312	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R4313	NRVA63D-562X	CMF RESISTOR	5.6kΩ,1/16W
R4314	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4315	NRVA63D-471X	CMF RESISTOR	470Ω,1/16W
R4316	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R4317	NRVA63D-471X	CMF RESISTOR	470Ω,1/16W
R4318	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R4319	NRVA63D-271X	CMF RESISTOR	270Ω,1/16W
R4320	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R4321	NRVA63D-331X	CMF RESISTOR	330Ω,1/16W
R4322	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R4323	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4324	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4325	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4326	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4328	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4329	NRSA63J-432X	MG RESISTOR	4.3kΩ,1/16W
R4330	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R4331	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4332	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4333	NRSA63J-432X	MG RESISTOR	4.3kΩ,1/16W
R4334	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4335	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4336	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4801	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4802	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R4804	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R4805	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4806	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4808	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
R4809	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4810	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4811	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4812	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4813	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
R4814	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4815	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R4816	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4817	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
R4818	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R4819	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4820	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4821	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4822	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R4823	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R4824	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4825	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4851	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4852	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4853	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4854	NRSA63J-202X	MG RESISTOR	2kΩ,1/16W
R4855	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R4856	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4857	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
R4858	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R4859	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
R4860	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4861	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4862	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4863	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4864	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5501	NCB31CK-104X	CAPACITOR	0.1μF,16V
R5503	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5504	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5505	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5506	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5507	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5508	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5509	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5510	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5511	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5512	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5513	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5514	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5515	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5516	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5602	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5604	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
R5605	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5606	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5607	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6001	NRVA63D-133X	CMF RESISTOR	13kΩ,1/16W
R6002	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R6003	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R6004	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6005	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R6006	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R6007	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R6008	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6101	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6102	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
R6103	NRVA63D-113X	CMF RESISTOR	11kΩ,1/16W
R6104	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R6105	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R6111	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6112	NRVA63D-183X	CMF RESISTOR	18kΩ,1/16W
R6113	NRVA63D-472X	CMF RESISTOR	4.7kΩ,1/16W
R6114	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6115	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R6117	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6121	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6122	NRSA63J-363X	MG RESISTOR	36kΩ,1/16W
R6123	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R6124	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6125	NRSA63J-133X	MG RESISTOR	13kΩ,1/16W
R6126	NRSA63J-363X	MG RESISTOR	36kΩ,1/16W
R6131	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6132	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6133	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R6134	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6135	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R6136	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R6141	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6142	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
R6143	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6144	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6145	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6146	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R6151	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6153	NRVA63D-363X	CMF RESISTOR	36kΩ,1/16W
R6154	NRVA63D-242X	CMF RESISTOR	2.4kΩ,1/16W
R6155	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6156	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R6157	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R6159	NRVA63D-683X	CMF RESISTOR	68kΩ,1/16W
R6160	NRVA63D-913X	CMF RESISTOR	91kΩ,1/16W
R6161	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R6162	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R6163	NRVA63D-513X	CMF RESISTOR	51kΩ,1/16W
R6164	NRVA63D-823X	CMF RESISTOR	82kΩ,1/16W
R6165	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
R6166	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6167	NRSA63J-222X	MG RESISTOR,A	2.2kΩ,1/16W
R6168	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R6169	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6170	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R6171	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R6201	NRSA63J-103X	MG RESISTOR,B,C	10kΩ,1/16W
R6202	NRSA63J-101X	MG RESISTOR,B,C	100Ω,1/16W
R6203	NRSA63J-103X	MG RESISTOR,B,C	10kΩ,1/16W
R6205	NRSA63J-184X	MG RESISTOR,B,C	180kΩ,1/16W
R6206	NRSA63J-102X	MG RESISTOR,B,C	1kΩ,1/16W
R6301	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6302	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6303	NRSA63J-224X	MG RESISTOR	220kΩ,1/16W
R6304	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R6305	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6307	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6308	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R7801	NRSA63J-101X	MG RESISTOR,C	100Ω,1/16W
R7802	NRSA63J-563X	MG RESISTOR,C	56kΩ,1/16W
R7803	NRSA63J-101X	MG RESISTOR,C	100Ω,1/16W
R7804	NRSA63J-101X	MG RESISTOR,C	100Ω,1/16W
R7812	NRVA63D-153X	CMF RESISTOR,C	15kΩ,1/16W
R7813	NRSA63J-224X	MG RESISTOR,C	220kΩ,1/16W
R7814	NRSA63J-224X	MG RESISTOR,C	220kΩ,1/16W
R7815	NRSA63J-393X	MG RESISTOR,C	39kΩ,1/16W
R7816	NRSA63J-0R0X	MG RESISTOR,C	0Ω,1/16W
R7817	NRSA63J-103X	MG RESISTOR,A,B	10kΩ,1/16W
R7818	NRSA63J-562X	MG RESISTOR,A,B	5.6kΩ,1/16W
R7819	NRSA63J-103X	MG RESISTOR,A,B	10kΩ,1/16W
R7820	NRSA63J-822X	MG RESISTOR,A,B	8.2kΩ,1/16W
RA1001	NRZ0038-102X	NETWORK RESISTOR	1kΩ
RA1002	NRZ0038-102X	NETWORK RESISTOR	1kΩ
RA1003	NRZ0038-104X	NETWORK RESISTOR	100kΩ
RA1004	NRZ0038-104X	NETWORK RESISTOR	100kΩ
RA1005	NRZ0038-102X	NETWORK RESISTOR	1kΩ
RA1006	NRZ0038-102X	NETWORK RESISTOR	1kΩ
RA1401	NRZ0038-473X	NETWORK RESISTOR	47kΩ
RA1402	NRZ0038-102X	NETWORK RESISTOR	1kΩ
RA1403	NRZ0038-102X	NETWORK RESISTOR	1kΩ
RA4303	NRZ0034-100W	NETWORK RESISTOR	10Ω
RA4304	NRZ0034-100W	NETWORK RESISTOR	10Ω
RA4305	NRZ0034-100W	NETWORK RESISTOR	10Ω
C501	NCB31CK-104X	CAPACITOR	0.1μF,16V
C502	NCB31CK-104X	CAPACITOR	0.1μF,16V
C503	NCB31CK-104X	CAPACITOR	0.1μF,16V
C504	NCB31CK-104X	CAPACITOR	0.1μF,16V
C505	NCB31CK-104X	CAPACITOR	0.1μF,16V
C506	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C1003	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1004	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1005	NDC31HJ-330X	CAPACITOR	33pF,50V
C1006	NDC31HJ-150X	CAPACITOR	15pF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1007	NCF31HZ-223X	CAPACITOR	0.022μF,50V
C1008	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1009	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1010	NBE20JM-226X	T CAPACITOR	22μF,6.3V
C1011	NEAB1CM-226X	E CAPACITOR	22μF,16V
C1012	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1013	NDC31HJ-120X	CAPACITOR	12pF,50V
C1015	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1016	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1017	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1018	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1019	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1021	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1022	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1023	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1024	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1025	NCF31HZ-223X	CAPACITOR	0.022μF,50V
C1026	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1027	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1028	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1029	NEA71CM-106X	E CAPACITOR	10μF,16V
C1031	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1032	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1033	NEA71HM-335X	E CAPACITOR	3.3μF,50V
C1034	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1036	NCB31HK-472X	CAPACITOR	0.0047μF,50V
C1037	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1401	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1402	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1405	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1406	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1407	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C1408	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1414	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1415	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1416	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1417	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1418	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C1419	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C1420	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1421	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2151	NCB31HK-472X	CAPACITOR	0.0047μF,50V
C2152	NCB31HK-472X	CAPACITOR	0.0047μF,50V
C2153	NDC31HJ-101X	CAPACITOR	100pF,50V
C2154	NDC31HJ-101X	CAPACITOR	100pF,50V
C3001	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3002	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3003	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3004	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3005	NCB30JK-105X	CAPACITOR	1μF,6.3V
C3006	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3009	NDC31HJ-100X	CAPACITOR	10pF,50V
C3010	NDC31HJ-100X	CAPACITOR	10pF,50V
C3011	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3012	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3022	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3023	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3027	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3028	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3035	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3037	NCF31CZ-104X	CAPACITOR	0.1μF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3038	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3040	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3041	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3042	NCB21CK-474X	CAPACITOR	0.47µF,16V
C3047	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3048	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3049	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3050	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3101	NDC31HJ-271X	CAPACITOR	270pF,50V
C3102	NCB21CK-105X	CAPACITOR	1µF,16V
C3103	NCB21CK-105X	CAPACITOR	1µF,16V
C3104	NCB21CK-105X	CAPACITOR	1µF,16V
C3105	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3106	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3107	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3108	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3109	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3110	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
C3201	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C3203	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3204	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3205	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3207	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3208	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3212	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3213	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3214	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3215	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3217	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3218	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3219	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3220	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3221	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3222	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3223	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3224	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3227	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3228	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3229	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3230	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3301	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3302	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3303	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3304	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3305	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3306	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3307	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3308	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3309	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3310	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3311	NDC31HJ-151X	CAPACITOR	150pF,50V
C3312	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3313	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3314	NCB31HK-102X	CAPACITOR	0.001µF,50V
C3316	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3317	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3318	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3319	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3320	NCB11CK-225X	CAPACITOR	2.2µF,16V
C3321	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3322	NCB31CK-683X	CAPACITOR	0.068µF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3323	NCB11CK-225X	CAPACITOR	2.2µF,16V
C3324	NCB31CK-333X	CAPACITOR	0.033µF,16V
C3326	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3331	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3332	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3333	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3334	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3335	NDC31HJ-100X	CAPACITOR	10pF,50V
C3336	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3337	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3401	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3402	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3404	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3702	NBE20JM-226X	T CAPACITOR	22µF,6.3V
C3704	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3705	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3706	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3707	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3708	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3709	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3710	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3711	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3712	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3713	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3720	NEA50GM-337X	E CAPACITOR	330µF,4.0V
C3723	NEA50GM-337X	E CAPACITOR	330µF,4.0V
C3724	NCB21CK-105X	CAPACITOR	1µF,16V
C3725	NCB21CK-105X	CAPACITOR	1µF,16V
C4301	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4302	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4303	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4304	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4305	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4306	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4307	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4308	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4309	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4310	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4311	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C4312	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4313	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4314	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4315	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4316	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4317	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4318	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4319	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4320	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4321	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4322	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4323	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4324	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4325	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4326	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4327	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4328	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4329	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4330	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4331	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4332	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4333	NBE20JM-106X	T CAPACITOR	10µF,6.3V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C4334	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4335	NDC31HJ-220X	CAPACITOR	22pF,50V
C4801	NBE41AM-106X	T CAPACITOR	10µF,10V
C4802	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4805	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4806	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4808	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4809	NCF21CZ-105X	CAPACITOR	1µF,16V
C4810	NCB21EK-104X	CAPACITOR	0.1µF,25V
C4812	NCF21CZ-105X	CAPACITOR	1µF,16V
C4813	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4851	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4852	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4853	NEAB1CM-226X	E CAPACITOR	22µF,16V
C4854	NBP41CM-156X	T CAPACITOR	15µF,16V
C4855	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4856	NDC31HJ-330X	CAPACITOR	33pF,50V
C4857	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4858	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4859	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4860	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4861	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4863	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4864	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5501	NBE41AM-106X	T CAPACITOR	10µF,10V
C5502	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5503	NBP41DM-106X	T CAPACITOR	10µF,20V
C5504	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5505	NBE40JM-476X	T CAPACITOR	47µF,6.3V
C5506	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5507	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5508	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5509	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5510	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5511	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5512	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5513	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5514	NCB21CK-105X	CAPACITOR	1µF,16V
C5515	NBP21VM-105X	T CAPACITOR	1µF,35V
C5602	NCB21AK-105X	CAPACITOR	1µF,10V
C5603	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5604	NBE40GM-107X	T CAPACITOR	100µF,4.0V
C5605	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5606	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5607	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5608	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5609	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5610	NCB21AK-105X	CAPACITOR	1µF,10V
C5611	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5612	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5613	NCB21AK-105X	CAPACITOR	1µF,10V
C5614	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5615	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5616	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5617	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6001	NCB21CK-105X	CAPACITOR	1µF,16V
C6002	NCB21CK-105X	CAPACITOR	1µF,16V
C6003	NEA71CM-106X	E CAPACITOR	10µF,16V
C6004	NDC31HJ-101X	CAPACITOR	100pF,50V
C6005	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6006	NCB21CK-473X	CAPACITOR	0.047µF,16V
C6007	NCB21CK-224X	CAPACITOR	0.22µF,16V
C6008	NCB31CK-473X	CAPACITOR	0.047µF,16V
C6009	NCB31CK-473X	CAPACITOR	0.047µF,16V
C6010	NCF31AZ-105X	CAPACITOR	1µF,10V
C6011	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6012	NCF31AZ-105X	CAPACITOR	1µF,10V
C6013	NCB31HK-561X	CAPACITOR	560pF,50V
C6014	NCB31HK-561X	CAPACITOR	560pF,50V
C6015	NCB31CK-473X	CAPACITOR	0.047µF,16V
C6016	NCB31HK-272X	CAPACITOR	0.0027µF,50V
C6017	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6018	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6019	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C6020	NCF31AZ-105X	CAPACITOR	1µF,10V
C6021	NCF31AZ-105X	CAPACITOR	1µF,10V
C6101	NCB21CK-105X	CAPACITOR	1µF,16V
C6102	NCB10JK-106X	CAPACITOR	10µF,6.3V
C6104	NCB31HK-102X	CAPACITOR	0.001µF,50V
C6111	NCB21CK-105X	CAPACITOR	1µF,16V
C6112	NCB10JK-106X	CAPACITOR	10µF,6.3V
C6114	NCB31HK-102X	CAPACITOR	0.001µF,50V
C6115	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C6116	NCB21CK-105X	CAPACITOR	1µF,16V
C6121	NCB21CK-105X	CAPACITOR	1µF,16V
C6122	NCB11CK-105X	CAPACITOR	1µF,16V
C6123	NCB21CK-224X	CAPACITOR	0.22µF,16V
C6131	NCB21CK-105X	CAPACITOR	1µF,16V
C6132	NCB11CK-105X	CAPACITOR	1µF,16V
C6133	NCB21CK-224X	CAPACITOR	0.22µF,16V
C6141	NCB21CK-105X	CAPACITOR	1µF,16V
C6142	NCB11AK-475X	CAPACITOR	4.7µF,10V
C6144	NCB31HK-472X	CAPACITOR	0.0047µF,50V
C6145	NDC31HJ-330X	CAPACITOR	33pF,50V
C6146	NDC31HJ-330X	CAPACITOR	33pF,50V
C6151	NCB21CK-105X	CAPACITOR	1µF,16V
C6152	NCB11CK-105X	CAPACITOR	1µF,16V
C6153	NCB11CK-105X	CAPACITOR	1µF,16V
C6154	NCB11EK-105X	CAPACITOR	1µF,25V
C6155	NCB11EK-105X	CAPACITOR	1µF,25V
C6156	NCB31HK-272X	CAPACITOR	0.0027µF,50V
C6157	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6158	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6161	NCB21CK-105X	CAPACITOR,A	1µF,16V
C6162	NCB21CK-105X	CAPACITOR	1µF,16V
C6163	NCB21CK-105X	CAPACITOR	1µF,16V
C6201	NBE20JM-106X	T CAPACITOR,B,C	10µF,6.3V
C6301	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6404	NCB21CK-105X	CAPACITOR	1µF,16V
C7801	NCF31CZ-104X	CAPACITOR,C	0.1µF,16V
C7802	NCF31CZ-104X	CAPACITOR,C	0.1µF,16V
C7803	NCB31HK-102X	CAPACITOR,C	0.001µF,50V
C7805	NCF21CZ-105X	CAPACITOR	1µF,16V
C7806	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7807	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C7810	NCF21CZ-105X	CAPACITOR,C	1µF,16V
C7811	NCF21CZ-105X	CAPACITOR,C	1µF,16V
C7812	NBE21AM-106X	T CAPACITOR,C	10µF,10V
C7814	NCB21AK-105X	CAPACITOR,A,B	1µF,10V
C7815	NBE20JM-106X	T CAPACITOR,A,B	10µF,6.3V
L501	NQL315K-100X	COIL	10µH
L1001	NQL315K-220X	COIL	22µH

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L1002	NQL315K-220X	COIL	22µH
	L1003	NQL315K-220X	COIL	22µH
	L1005	NQL184J-390X	COIL	39µH
	L1401	NQL164K-100X	COIL	10µH
	L2151	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	L2152	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	L3001	NQR0129-002X	FERRITE BEAD	
	L3002	NQR0129-002X	FERRITE BEAD	
	L3004	NQR0129-002X	FERRITE BEAD	
	L3101	NQR0129-002X	FERRITE BEAD	
	L3102	NQR0129-002X	FERRITE BEAD	
	L3103	NQR0337-001X	COIL	
	L3202	NQR0129-002X	FERRITE BEAD	
	L3203	NQR0129-002X	FERRITE BEAD	
	L3204	NQR0129-002X	FERRITE BEAD	
	L3301	NQR0129-002X	FERRITE BEAD	
	L3302	NQR0129-002X	FERRITE BEAD	
	L3303	NQR0129-002X	FERRITE BEAD	
	L3304	NQR0129-002X	FERRITE BEAD	
	L3401	NQR0129-002X	FERRITE BEAD	
	L3402	NQR0129-002X	FERRITE BEAD	
	L3701	NQL402M-100X	COIL	10µH
	L4301	NQR0129-002X	FERRITE BEAD	
	L4302	NQR0129-002X	FERRITE BEAD	
	L4303	NQL315K-100X	COIL	10µH
	L4304	NQL315K-100X	COIL	10µH
	L4305	NQR0129-002X	FERRITE BEAD	
	L4801	NQL315K-220X	COIL	22µH
	L4851	NQR0129-002X	FERRITE BEAD	
	L4852	NQL164K-220X	COIL	22µH
	L4853	NQL302N-100X	COIL	10µH
	L5501	NQR0129-002X	FERRITE BEAD	
	L5502	NQR0129-002X	FERRITE BEAD	
	L5503	NQR0129-002X	FERRITE BEAD	
	L5504	NQL315K-100X	COIL	10µH
	L5505	NQL315K-100X	COIL	10µH
	L5506	NQL045M-4R7X	COIL	4.7µH
	L5601	NQR0129-002X	FERRITE BEAD	
	L6001	NQLZ011-4R7X	COIL	4.7µH
	L6002	NQLZ011-4R7X	COIL	4.7µH
	L6101	NQLZ011-390X	COIL	39µH
	L6111	NQLZ011-390X	COIL	39µH
	L6112	NQL144K-220X	COIL	22µH
	L6121	NQL32CM-470X	COIL	47µH
	L6131	NQL32CM-470X	COIL	47µH
	L6141	NQLZ011-390X	COIL	39µH
	L6151	NQLZ011-221X	COIL	220µH
	L6401	NQL144K-220X	COIL	22µH
	L7803	NQL144K-100X	COIL	10µH
	X1001	NAX0294-001X	RESONATOR	
	X1002	NAX0325-001X	CRYSTAL RESONATOR	
	X3001	NAX0206-001X	CRYSTAL RESONATOR	
	X3301	NAX0296-001X	C OSCILLATOR	
	X5501	NAX0319-001X	CXO	
	TH3201	NAD0025-222X	N THERMISTOR	
	WR1	QUB450-07VLA2	SIN TWIST WIRE,BRACKET(MONITOR)	
	J501	NNZ0028-001	D CONNECTOR	
	J502	LY31247-001A	BATT.TERM.UNIT	
	J503	PEMC1203	MINI JACK	
	J504	LY30862-001B	JACK UNIT	
	J505	QND0068-001	S JACK	
⚠	J506	QAB0022-001	LI BATTERY	
	J507	QNS0152-001	2.5 JACK	
	CN101	QGB0509M2-A0X	CONNECTOR	
	CN102	QGF0504C1-40X	FPC CONNECTOR	
	CN104	QGF0507F1-10X	FPC CONNECTOR,A,B	
		QGF0507F1-20X	FPC CONNECTOR,C	
	CN105	QGB0801M1-30X	CONNECTOR	
	CN106	QGF0507F1-18X	FPC CONNECTOR	
	CN107	QGF0507F1-22X	FPC CONNECTOR	
	CN108	QGA1201F2-02X	CONNECTOR,B,C	
	CN109	QGF0507F1-15X	FPC CONNECTOR	
	CN110	QGF0507F1-10X	FPC CONNECTOR	
⚠	F6001	NMFZ006-R50X-K	FUSE	T0.5A
⚠	F6002	NMFZ006-1R6X-K	FUSE	T1.6A
⚠	F6003	NMFZ006-1R6X-K	FUSE	T1.6A
⚠	F6004	NMFZ006-R50X-K	FUSE	T0.5A
⚠	F7801	NMFZ006-R20X-K	FUSE	T0.2A
	OT1	PU59915-105	#500SPACER0.01	
	SD1	YU40341	INSULATOR	

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SECOND BOARD ASSEMBLY <02>

	PW1	YB10259A1-01	SECOND BOARD ASSY	
	IC1601	BA6866KV	IC	
	IC2101	AK4518-VF-X	IC	
	IC2201	LA74200W	IC	
	IC3501	AN3731FHQ	IC(DIGITAL)	
	Q1601	UMC3N	TRANSISTOR	
	Q2205	UMX1N	PAIR TRANSISTOR	
	Q2206	2SC4617/QR/-X	TRANSISTOR	
	Q2401	2SC4617/QR/-X	TRANSISTOR	
	Q2402	2SD1511/R/-X	TRANSISTOR	
	Q2404	2SC4617/QR/-X	TRANSISTOR	
	Q2502	DTC144EE	TRANSISTOR	
	Q2504	DTA143EE	TRANSISTOR	
	Q2506	2SA1774/QR/-X	TRANSISTOR	
	Q2509	2SC4617/QR/-X	TRANSISTOR	
	Q2601	2SA1774/QR/-X	TRANSISTOR	
	Q2602	2SA1774/QR/-X	TRANSISTOR	
	Q3501	2SC4226/4/-X	TRANSISTOR	
	Q3502	2SD1979/S/-X	TRANSISTOR	
	Q3503	2SD1979/S/-X	TRANSISTOR	
	Q3504	2SC4226/4/-X	TRANSISTOR	
	Q3505	2SA1577/QR/-X	TRANSISTOR	
	Q3506	DTC144EE	TRANSISTOR	
	D1602	DAP222	DIODE	
	D1603	DAP222	DIODE	
	D1604	DAP222	DIODE	
	D2203	DAN222	DIODE	
	D2501	DAP222	DIODE	
	R1601	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
	R1602	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
	R1603	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R1604	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R1605	NRV142F-R22X	CMF RESISTOR	0.22Ω, 1/4W
	R1606	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1608	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1609	NRV142F-R33X	CMF RESISTOR	0.33Ω,1/4W
R1610	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1611	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1612	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1613	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1614	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R1615	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1616	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R1617	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R1618	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R1619	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R1620	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1621	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1622	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1623	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1624	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R1625	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1626	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1627	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1628	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
R1629	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1630	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1631	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1632	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1633	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1634	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1635	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1636	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1637	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R1642	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1644	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1646	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2102	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
R2108	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R2109	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R2112	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2113	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2114	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2202	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2203	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2205	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2207	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2209	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R2210	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R2212	NRSA63J-2R7X	MG RESISTOR	2.7Ω,1/16W
R2213	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2214	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2215	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2216	NRSA63J-2R7X	MG RESISTOR	2.7Ω,1/16W
R2219	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2220	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2222	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2223	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R2224	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R2401	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R2402	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R2403	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2404	NRSA63J-113X	MG RESISTOR	11kΩ,1/16W
R2406	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2407	NRSA63J-820X	MG RESISTOR	82Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R2408	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R2409	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2410	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2501	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2502	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R2503	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R2504	NRSA63J-394X	MG RESISTOR	390kΩ,1/16W
R2505	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R2508	NRSA63J-155X	MG RESISTOR	1.5MΩ,1/16W
R2509	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2510	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2601	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R2602	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R2606	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2607	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2608	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2609	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2610	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2611	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2612	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2613	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2614	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2615	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2616	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R2617	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R2622	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2623	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2624	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2625	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2626	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R2627	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R2628	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2629	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2632	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2633	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3502	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3504	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3506	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3507	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3508	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3509	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R3510	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3511	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3512	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R3513	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R3514	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3515	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3516	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3517	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3518	NRSA63J-680X	MG RESISTOR	68Ω,1/16W
R3519	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R3520	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3521	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
R3523	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3524	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
C1601	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1602	NBE21AM-106X	T CAPACITOR	10μF,10V
C1603	NBE21AM-106X	T CAPACITOR	10μF,10V
C1605	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1606	NCB31HK-152X	CAPACITOR	0.0015μF,50V
C1607	NCB31CK-473X	CAPACITOR	0.047μF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1614	NBE21AM-106X	T CAPACITOR	10µF,10V
C1618	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C1619	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C1620	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C1621	NCB21AK-105X	CAPACITOR	1µF,10V
C1622	NCB31CK-473X	CAPACITOR	0.047µF,16V
C1623	NCB31CK-473X	CAPACITOR	0.047µF,16V
C1624	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1625	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1626	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C1627	NCB31HK-472X	CAPACITOR	0.0047µF,50V
C1628	NCB21CK-334X	CAPACITOR	0.33µF,16V
C1632	NBE21AM-106X	T CAPACITOR	10µF,10V
C1633	NCF21CZ-684X	CAPACITOR	0.68µF,16V
C1635	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2101	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2102	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2103	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2104	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2105	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2106	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2107	NCB21AK-105X	CAPACITOR	1µF,10V
C2108	NCB21AK-105X	CAPACITOR	1µF,10V
C2109	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2110	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C2111	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C2112	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2113	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2114	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2115	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2205	NCB21AK-105X	CAPACITOR	1µF,10V
C2206	NCB21AK-105X	CAPACITOR	1µF,10V
C2209	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2210	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2211	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2212	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2213	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2214	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2215	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2216	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2218	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2219	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2220	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2224	NCB21AK-105X	CAPACITOR	1µF,10V
C2225	NCB21AK-105X	CAPACITOR	1µF,10V
C2226	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2227	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2401	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2402	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2403	NBE21AM-106X	T CAPACITOR	10µF,10V
C2603	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2604	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2609	NCB31CK-683X	CAPACITOR	0.068µF,16V
C2610	NCB31CK-683X	CAPACITOR	0.068µF,16V
C2611	NCB31EK-153X	CAPACITOR	0.015µF,25V
C2612	NCB31EK-153X	CAPACITOR	0.015µF,25V
C2613	NCB31EK-123X	CAPACITOR	0.012µF,25V
C2614	NCB31EK-123X	CAPACITOR	0.012µF,25V
C2615	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2616	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2617	NCB21AK-105X	CAPACITOR	1µF,10V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2618	NCB21AK-105X	CAPACITOR	1µF,10V
C2619	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2620	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2621	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2622	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2623	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2624	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2631	NBE20GM-226X	T CAPACITOR	22µF,4.0V
C2633	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2634	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2635	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2636	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2639	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2640	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2641	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2642	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3501	NCB31HK-122X	CAPACITOR	0.0012µF,50V
C3502	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3503	NCB31HK-102X	CAPACITOR	0.001µF,50V
C3504	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3505	NDC31HJ-470X	CAPACITOR	47pF,50V
C3506	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3507	NCB31HK-681X	CAPACITOR	680pF,50V
C3508	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3509	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3510	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3511	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3512	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3513	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3514	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3515	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3516	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3517	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C3518	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3519	NDC31HJ-330X	CAPACITOR	33pF,50V
C3520	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3521	NDC31HJ-220X	CAPACITOR	22pF,50V
C3522	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3523	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3524	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3525	NDC31HJ-220X	CAPACITOR	22pF,50V
C3526	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3527	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3528	NDC31HJ-330X	CAPACITOR	33pF,50V
C3529	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3530	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C3531	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3532	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C3533	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3534	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C3535	NBE40JM-226X	T CAPACITOR	22µF,6.3V
L1601	NQL315K-100X	COIL	10µH
L2101	NQL315K-100X	COIL	10µH
L2201	NQL092K-R12X	COIL	0. 12µH
L2202	NQL092K-R12X	COIL	0. 12µH
L2601	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L2602	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L2603	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L3501	NQL402M-100X	COIL	10µH
L3502	NQL402M-100X	COIL	10µH
L3503	NQL085J-220X	COIL	22µH

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L3504	NQL085J-220X	COIL	22μH
	L3505	NQL402M-100X	COIL	10μH
	L3506	NQL402M-100X	COIL	10μH
	L3507	NQL315K-100X	COIL	10μH
	CN301	QGB0509L1-A0X	CONNECTOR	
	CN302	QGA1201F2-03X	CONNECTOR	
	CN304	QGA1201F2-02X	CONNECTOR	
	CN401	QGF0506F1-35X	FPC CONNECTOR	
	CN402	QGF0503F2-18X	FFC/FPC CONNECTOR	
	CN403	QGF0501F2-06X	FPC CONNECTOR	
	CN404	QGF0512C1-08X	FPC CONNECTOR	
	SD1	LY30969-001A	SHIELD CASE	
	SD2	LY31240-001A	SHIELD CASE	

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JUNCTION BOARD ASSEMBLY <03>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW2	YB10259A2-01	JUNCTION BOARD ASSY	
	SW501	NSW0095-001X	DETECT SWITCH	
	CN501	QGF0506F1-35X	FPC CONNECTOR	
	CN502	QGF0507F1-15X	FPC CONNECTOR	
	CN503	QGF0505F2-11X	FPC CONNECTOR	
	CN504	QGF0501F2-06X	FPC CONNECTOR	

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CCD BOARD ASSEMBLY <04>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20859A-02-SS	CCD BOARD ASSY	
	Q5002	2SC3931/CD/-X	TRANSISTOR	
	R5001	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
	R5002	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	R5003	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
	R5004	NRS181J-0R0X	MG RESISTOR	0Ω,1/8W
	C5001	NCB21CK-104X	CAPACITOR	0.1μF,16V
	C5002	NBP41DM-106X	T CAPACITOR	10μF,20V
	C5003	NCB21CK-104X	CAPACITOR	0.1μF,16V
	C5004	NBE21AM-106X	T CAPACITOR	10μF,10V
	C5006	NCB21CK-104X	CAPACITOR	0.1μF,16V
	C5007	NCB21HK-222X	CAPACITOR	0.0022μF,50V
	L5001	NQL315K-100X	COIL	10μH

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VF BL BOARD ASSEMBLY(DVL40EG) <06>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20862A	VF BL BOARD ASSY	
	Q7301	2SK2055	MOS FET	
	R7301	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	C7301	NBP41CM-226X	T CAPACITOR	22μF,16V
	C7302	NCB10JK-106X	CAPACITOR	10μF,6.3V
	L7301	NQL144K-100X	COIL	10μH
	BL7301	NLL0006-001	LAMP	
⚠	T7301	NQH0004-001X	FB TRANSF	
	CN7301	QGF0503C1-20X	FFC/FPC CONNECTOR	
	CN7302	QGF0503C1-16X	FFC/FPC CONNECTOR	

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MONITOR BOARD ASSEMBLY<07>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20860D-01	MONITOR BOARD ASSY,A	
		YB20860E-01	MONITOR BOARD ASSY,B	
		YB20860F-01	MONITOR BOARD ASSY,C	
	IC7601	AN2533FH	IC	
	IC7603	X25057M8-2.7-X	IC	
	IC7604	BU4053BCFV	IC,C	
	IC7605	TC4W53F	IC,C	
	Q7501	2SC3647/ST/-X	POW TRANSISTOR	
	Q7502	2SC3647/ST/-X	POW TRANSISTOR	
	Q7503	DTA144EE	TRANSISTOR	
	Q7504	2SC4617/QR/-X	TRANSISTOR	
	Q7505	2SC4617/QR/-X	TRANSISTOR	
	Q7506	2SC4617/QR/-X	TRANSISTOR	
	Q7601	2SC4617/QR/-X	TRANSISTOR,C	
	Q7602	DTC144EE	TRANSISTOR,C	
	Q7603	DTA144EE	TRANSISTOR,C	
	Q7604	DTA114YE	TRANSISTOR,C	
	Q7605	DTA114YE	TRANSISTOR,C	
	Q7606	DTA114YE	TRANSISTOR,C	
	Q7607	2SC4617/QR/-X	TRANSISTOR	
	Q7608	2SA1774/QR/-X	TRANSISTOR	
	Q7609	2SC4097/QR/-X	TRANSISTOR	
	Q7610	2SA1577/QR/-X	TRANSISTOR	
	Q7615	DTA144EE	TRANSISTOR	
	Q7616	DTC144EE	TRANSISTOR,C	
	Q7617	DTA114EE	TRANSISTOR,C	
	Q7618	DTC144EE	TRANSISTOR,C	
	D7601	RB471E	SB DIODE	
	D7603	MA111	DIODE,C	
	R7501	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R7502	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R7503	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R7504	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
	R7505	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R7506	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R7507	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R7508	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R7509	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7510	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
	R7601	NRSA63J-101X	MG RESISTOR,C	100Ω,1/16W
	R7602	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R7603	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R7604	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
	R7605	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
	R7606	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
	R7607	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
	R7608	NRSA63J-100X	MG RESISTOR,C	10Ω,1/16W
	R7609	NRSA63J-100X	MG RESISTOR,C	10Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R7610	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R7611	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R7612	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R7613	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R7616	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R7617	NRSA63J-102X	MG RESISTOR,C	1kΩ,1/16W
R7618	NRSA63J-0R0X	MG RESISTOR,A,B	0Ω,1/16W
R7620	NRSA63J-102X	MG RESISTOR,C	1kΩ,1/16W
R7627	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R7631	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R7632	NRSA63J-101X	MG RESISTOR,A,B	100Ω,1/16W
R7633	NRSA63J-101X	MG RESISTOR,A,B	100Ω,1/16W
R7634	NRSA63J-101X	MG RESISTOR,A,B	100Ω,1/16W
R7635	NRSA63J-220X	MG RESISTOR,C	22Ω,1/16W
R7636	NRSA63J-220X	MG RESISTOR,C	22Ω,1/16W
R7637	NRVA63D-123X	CMF RESISTOR,C	12kΩ,1/16W
R7638	NRVA63D-123X	CMF RESISTOR,C	12kΩ,1/16W
R7639	NRVA63D-123X	CMF RESISTOR,C	12kΩ,1/16W
R7640	NRVA63D-123X	CMF RESISTOR,C	12kΩ,1/16W
R7641	NRVA63D-123X	CMF RESISTOR,C	12kΩ,1/16W
R7642	NRVA63D-123X	CMF RESISTOR,C	12kΩ,1/16W
R7643	NRSA63J-220X	MG RESISTOR,C	22Ω,1/16W
R7645	NRSA63J-473X	MG RESISTOR,C	47kΩ,1/16W
R7646	NRSA63J-103X	MG RESISTOR,C	10kΩ,1/16W
R7649	NRVA63D-222X	CMF RESISTOR	2.2kΩ,1/16W
R7650	NRVA63D-222X	CMF RESISTOR	2.2kΩ,1/16W
R7651	NRVA63D-222X	CMF RESISTOR	2.2kΩ,1/16W
R7652	NRVA63D-222X	CMF RESISTOR	2.2kΩ,1/16W
R7653	NRVA63D-222X	CMF RESISTOR	2.2kΩ,1/16W
R7654	NRVA63D-222X	CMF RESISTOR	2.2kΩ,1/16W
R7657	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R7659	NRSA63J-335X	MG RESISTOR	3.3MΩ,1/16W
R7660	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R7661	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R7662	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R7663	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R7664	NRSA63J-332X	MG RESISTOR,B,C	3.3kΩ,1/16W
	NRSA63J-682X	MG RESISTOR,A	6.8kΩ,1/16W
R7665	NRSA63J-333X	MG RESISTOR,B,C	33kΩ,1/16W
	NRSA63J-821X	MG RESISTOR,A	820Ω,1/16W
R7666	NRSA63J-223X	MG RESISTOR,B,C	22kΩ,1/16W
	NRSA63J-332X	MG RESISTOR,A	3.3kΩ,1/16W
R7672	NRSA63J-0R0X	MG RESISTOR,A,B	0Ω,1/16W
R7673	NRSA63J-223X	MG RESISTOR,C	22kΩ,1/16W
R7674	NRSA63J-333X	MG RESISTOR,B,C	33kΩ,1/16W
R7675	NRSA63J-103X	MG RESISTOR,A	10kΩ,1/16W
R7677	NRSA63J-223X	MG RESISTOR,B,C	22kΩ,1/16W
R7678	NRSA63J-223X	MG RESISTOR,B,C	22kΩ,1/16W
R7679	NRSA63J-822X	MG RESISTOR,C	8.2kΩ,1/16W
R7681	NRSA63J-0R0X	MG RESISTOR,A,B	0Ω,1/16W
	NRSA63J-331X	MG RESISTOR,C	330Ω,1/16W
R7683	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7685	NRSA63J-392X	MG RESISTOR,C	3.9kΩ,1/16W
C7501	NCZ1016-180X	CAPACITOR,C	18pF,2kV
	NCZ1016-150X	CAPACITOR,A,B	15pF,2kV
C7502	NCZ1016-150X	CAPACITOR,A	15pF,2kV
	NCZ1016-180X	CAPACITOR,B,C	18pF,2kV
C7503	NFV41HJ-273X	MPPS CAPACITOR	0.027μF,50V
C7504	NCB31EK-103X	CAPACITOR	0.01μF,25V
C7505	NBE40JM-476X	T CAPACITOR	47μF,6.3V
C7506	NCB31EK-103X	CAPACITOR	0.01μF,25V
C7507	NDC31HJ-151X	CAPACITOR	150pF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C7508	NCB11CK-105X	CAPACITOR	1μF,16V
C7509	NCB31CK-104X	CAPACITOR	0.1μF,16V
C7510	NCB31HK-562X	CAPACITOR	0.0056μF,50V
C7601	NCB31CK-104X	CAPACITOR	0.1μF,16V
C7602	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C7603	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7604	NCB31CK-104X	CAPACITOR	0.1μF,16V
C7605	NCB31CK-104X	CAPACITOR	0.1μF,16V
C7606	NCB11CK-225X	CAPACITOR	2.2μF,16V
C7607	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7608	NCB11CK-225X	CAPACITOR	2.2μF,16V
C7609	NCB11CK-225X	CAPACITOR	2.2μF,16V
C7610	NBP41CM-226X	T CAPACITOR	22μF,16V
C7614	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7615	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7618	NCB31HK-822X	CAPACITOR	0.0082μF,50V
C7619	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C7620	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7621	NDC31HJ-151X	CAPACITOR	150pF,50V
C7623	NDC31HJ-471X	CAPACITOR	470pF,50V
C7625	NCB21AK-105X	CAPACITOR	1μF,10V
C7626	NDC31HJ-390X	CAPACITOR,C	39pF,50V
C7627	NCB31CK-104X	CAPACITOR	0.1μF,16V
C7628	NCF31AZ-105X	CAPACITOR	1μF,10V
C7629	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7630	NCB31CK-104X	CAPACITOR	0.1μF,16V
C7631	NCF31AZ-105X	CAPACITOR	1μF,10V
C7632	NCF31AZ-105X	CAPACITOR	1μF,10V
C7636	NCB31HK-102X	CAPACITOR	0.001μF,50V
C7637	NCB31HK-102X	CAPACITOR	0.001μF,50V
C7638	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7639	NCF31CZ-104X	CAPACITOR,C	0.1μF,16V
C7640	NBE21AM-475X	T CAPACITOR	4.7μF,10V
C7641	NBE21AM-475X	T CAPACITOR	4.7μF,10V
C7642	NBE21AM-475X	T CAPACITOR	4.7μF,10V
C7646	NBE21AM-335X	T CAPACITOR	3.3μF,10V
C7647	NBP21DM-335X	T CAPACITOR	3.3μF,20V
C7648	NCF31CZ-104X	CAPACITOR,C	0.1μF,16V
C7649	NCF31CZ-104X	CAPACITOR,C	0.1μF,16V
C7650	NBP41EM-475X	T CAPACITOR	4.7μF,25V
C7652	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7653	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C7654	NBP41EM-475X	T CAPACITOR	4.7μF,25V
C7655	NCB31CK-104X	CAPACITOR,B,C	0.1μF,16V
C7656	NCF31AZ-105X	CAPACITOR	1μF,10V
L7501	NQLZ010-680X	COIL	68μH
L7502	NQLZ010-220X	COIL	22μH
L7603	NQL144K-220X	COIL	22μH
L7604	NQL144K-220X	COIL	22μH
L7605	NQL144K-220X	COIL	22μH
L7606	NQL184J-470X	COIL,C	47μH
L7607	NQL144K-220X	COIL	22μH
L7608	NQL144K-220X	COIL,B,C	22μH
L7609	NQL144K-220X	COIL	22μH
L7610	NQL144K-220X	COIL	22μH
L7611	NQL144K-220X	COIL,A	22μH
⚠ T7501	NQS0037-001X	SW TRANSF	
CN7501	QGF0506F1-38X	FPC CONNECTOR	
CN7502	QGF0501F1-24X	FPC CONNECTOR	
CN7503	QGA5002F1-02X	CONNECTOR	
OT1	LY41547-001A	EARTH PLATE(1)	
OT2	LY40559-001A	SHIELD SHEET	

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
OT3	LY41729-001A	SHIELD SHEET	
OT4	LY30016-0W1A	SPACER-A,A	

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ZOOM UNIT <08>

PW	LY20457-001B	ZOOM UNIT

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OPE.COVER UNIT <09>

PW	LY10176-002C	OPE.COVER UNIT,A
	LY10176-003C	OPE.COVER UNIT,B,C

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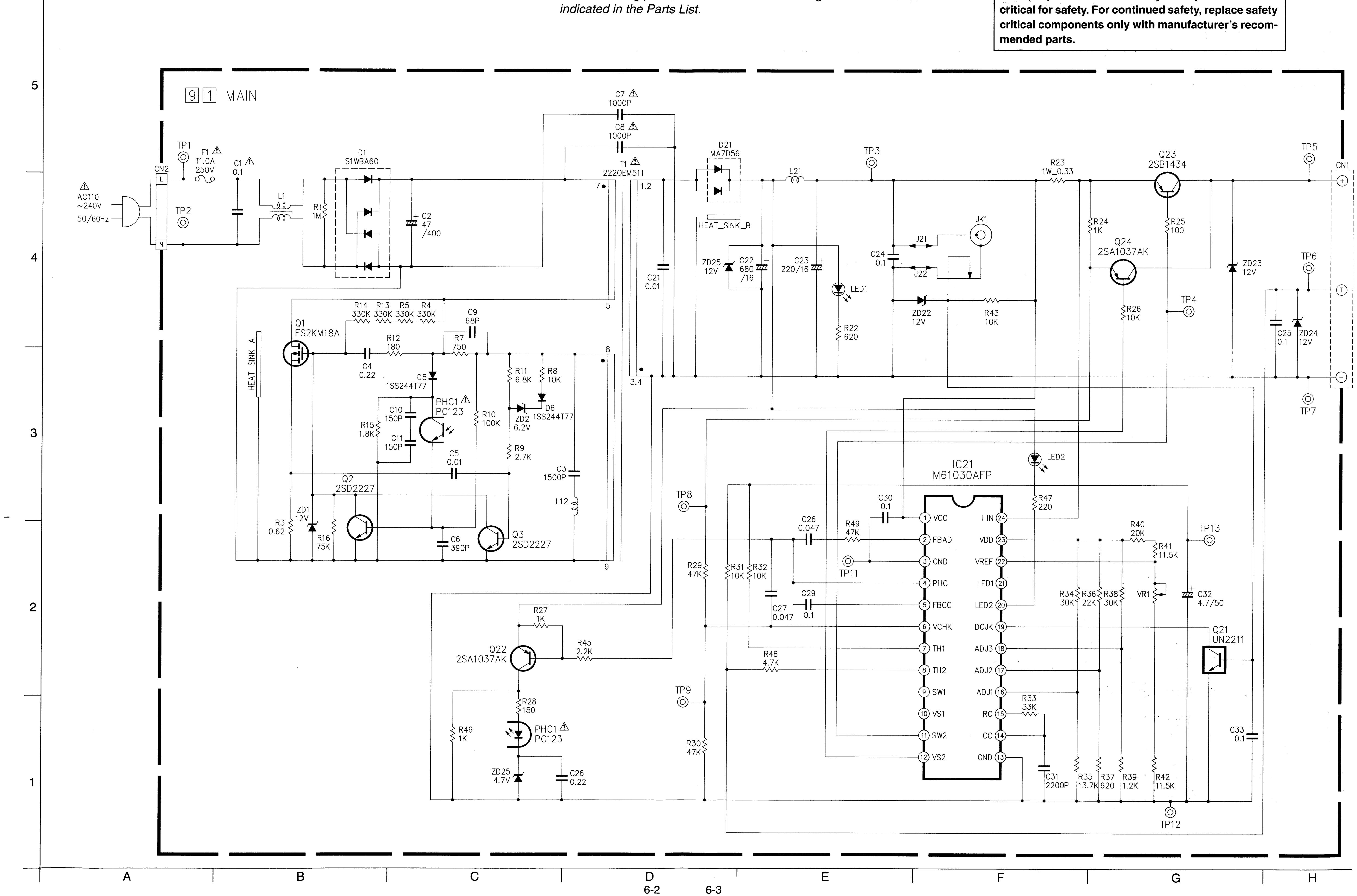
B/W VF BOARD ASSEMBLY(DVL20EG/30EG) <10>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB20861B-02	B/W VF BOARD ASSY	
IC7001	PCVVQ110AFB	IC	
Q7001	2SD2216J/QR/-X	TRANSISTOR	
D7002	MA111	DIODE	
D7003	MA111	DIODE	
R7001	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7002	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
R7003	NDC31HJ-181X	CAPACITOR	180pF,50V
R7004	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R7005	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R7006	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7007	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7008	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7009	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R7010	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7011	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R7012	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
R7013	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R7014	NRVA63D-680X	CMF RESISTOR	68Ω,1/16W
R7016	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R7019	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R7020	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R7021	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7022	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R7027	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7033	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7034	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7035	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7036	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R7039	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R7040	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
VR7001	NVP0016-223X	TRIM RESISTOR,GAIN	
VR7002	NVP0016-223X	TRIM RESISTOR,BLACK LEVEL	
C7001	NCB21CK-104X	CAPACITOR	0.1μF,16V
C7002	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7003	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C7004	NCB21HK-122X	CAPACITOR	0.0012μF,50V
C7005	NCB31EK-103X	CAPACITOR	0.01μF,25V
C7006	NCF21CZ-105X	CAPACITOR	1μF,16V
C7007	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7008	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7009	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7010	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7011	NCB31HK-102X	CAPACITOR	0.001μF,50V
C7012	NCF21CZ-105X	CAPACITOR	1μF,16V
C7013	NCB31EK-103X	CAPACITOR	0.01μF,25V
C7014	NCB31EK-103X	CAPACITOR	0.01μF,25V
C7015	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7018	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7019	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7021	NCB31EK-103X	CAPACITOR	0.01μF,25V
C7023	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C7024	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C7025	NEA71CM-107X	E CAPACITOR	100μF,16V
L7001	NQL144K-100X	COIL	10μH
L7002	NQL144K-100X	COIL	10μH
L7003	NQL144K-220X	COIL	22μH
CN7001	QGF0503C1-10V	FFC/FPC CONNECTOR	
CN7002	QGF0503C1-20X	FFC/FPC CONNECTOR	
CN7003	QGA1201C2-02X	CONNECTOR	

6.2 SCHEMATIC DIAGRAM

NOTE: *When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*

Safety precautions
The components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.



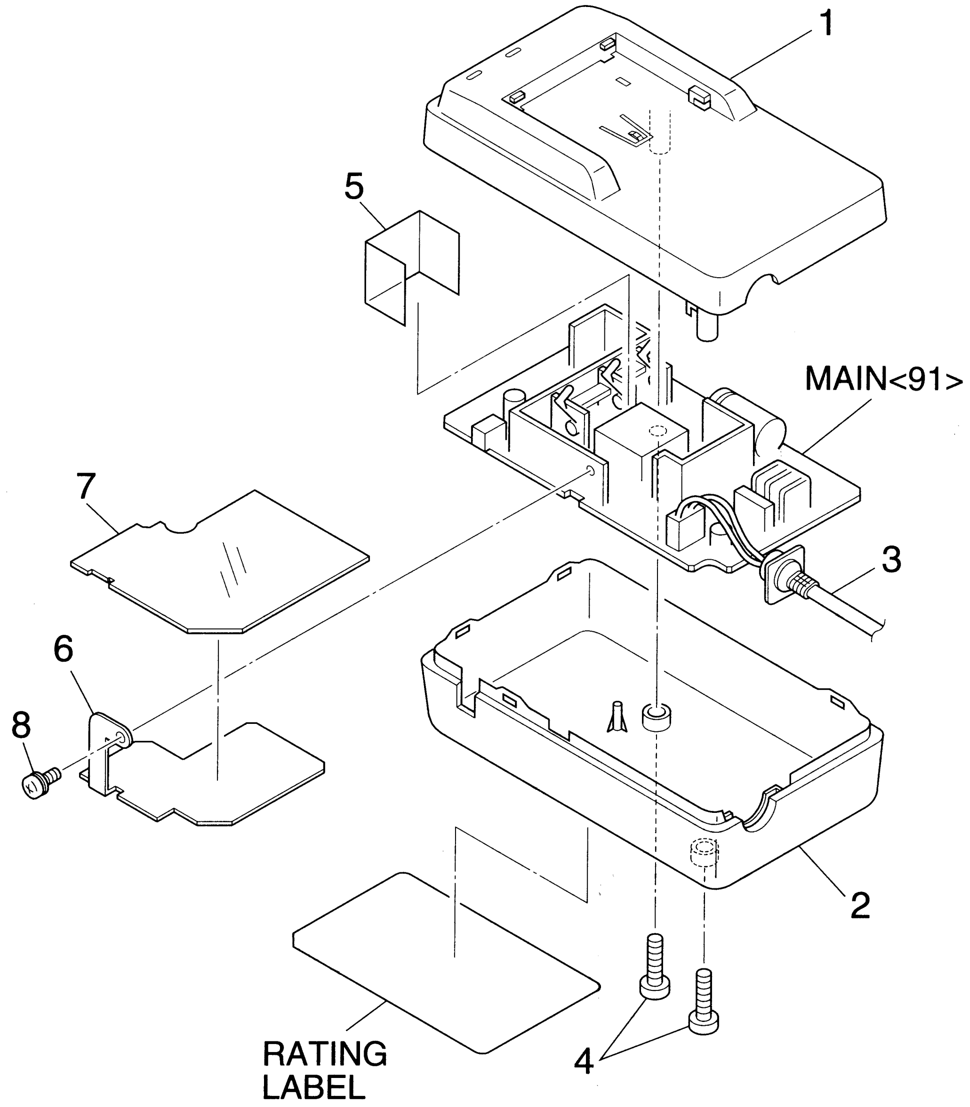
5
4
3
2
1
A
B
C
D
E
F
G
H
9 1 MAIN
⚠ AC110 ~240V 50/60Hz
CN2
L
N
TP1
TP2
F1 ⚠ T1.0A 250V
C1 ⚠ 0.1
L1
R1 1M
D1 S1WBA60
C2 47 /400
C7 ⚠ 1000P
C8 ⚠ 1000P
T1 ⚠ 2220EM511
7
1.2
5
8
9
3.4
D21 MA7D56
HEAT_SINK_B
ZD25 12V
C22 680 /16
C23 220/16
C21 0.01
L21
TP3
LED1
R22 620
J21
J22
JK1
C24 0.1
ZD22 12V
R43 10K
R23 1W_0.33
R24 1K
Q23 2SB1434
R25 100
Q24 2SA1037AK
R26 10K
TP4
ZD23 12V
TP5
TP6
TP7
CN1
+
T
−
C25 0.1
ZD24 12V
HEAT SINK A
Q1 FS2KM18A
R14 330K
R13 330K
R5 330K
R4 330K
C9 68P
R12 180
C4 0.22
R7 750
D5 1SS244T77
R11 6.8K
R8 10K
D6 1SS244T77
ZD2 6.2V
PHC1 ⚠ PC123
C10 150P
C11 150P
R15 1.8K
R10 100K
R9 2.7K
C5 0.01
C3 1500P
L12
Q2 2SD2227
Q3 2SD2227
ZD1 12V
R3 0.62
R16 75K
C6 390P
LED2
IC21 M61030AFP
1 VCC
2 FBAD
3 GND
4 PHC
5 FBCC
6 VCHK
7 TH1
8 TH2
9 SW1
10 VS1
11 SW2
12 VS2
24 I IN
23 VDD
22 VREF
21 LED1
20 LED2
19 DCJK
18 ADJ3
17 ADJ2
16 ADJ1
15 RC
14 CC
13 GND
TP8
TP9
TP11
TP12
TP13
C30 0.1
C26 0.047
R49 47K
R29 47K
R31 10K
R32 10K
C27 0.047
C29 0.1
R46 4.7K
R30 47K
R47 220
R40 20K
R41 11.5K
R34 30K
R36 22K
R38 30K
VR1
C32 4.7/50
Q21 UN2211
R33 33K
C31 2200P
R35 13.7K
R37 620
R39 1.2K
R42 11.5K
C33 0.1
R27 1K
Q22 2SA1037AK
R45 2.2K
R28 150
R46 1K
PHC1 ⚠ PC123
ZD25 4.7V
C26 0.22

SECTION 6
AC POWER ADAPTER (AA-V20EG)

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

6.1 CABINET ASSEMBLY <MA>



⚠ REF No. PART No. PART NAME, DESCRIPTION

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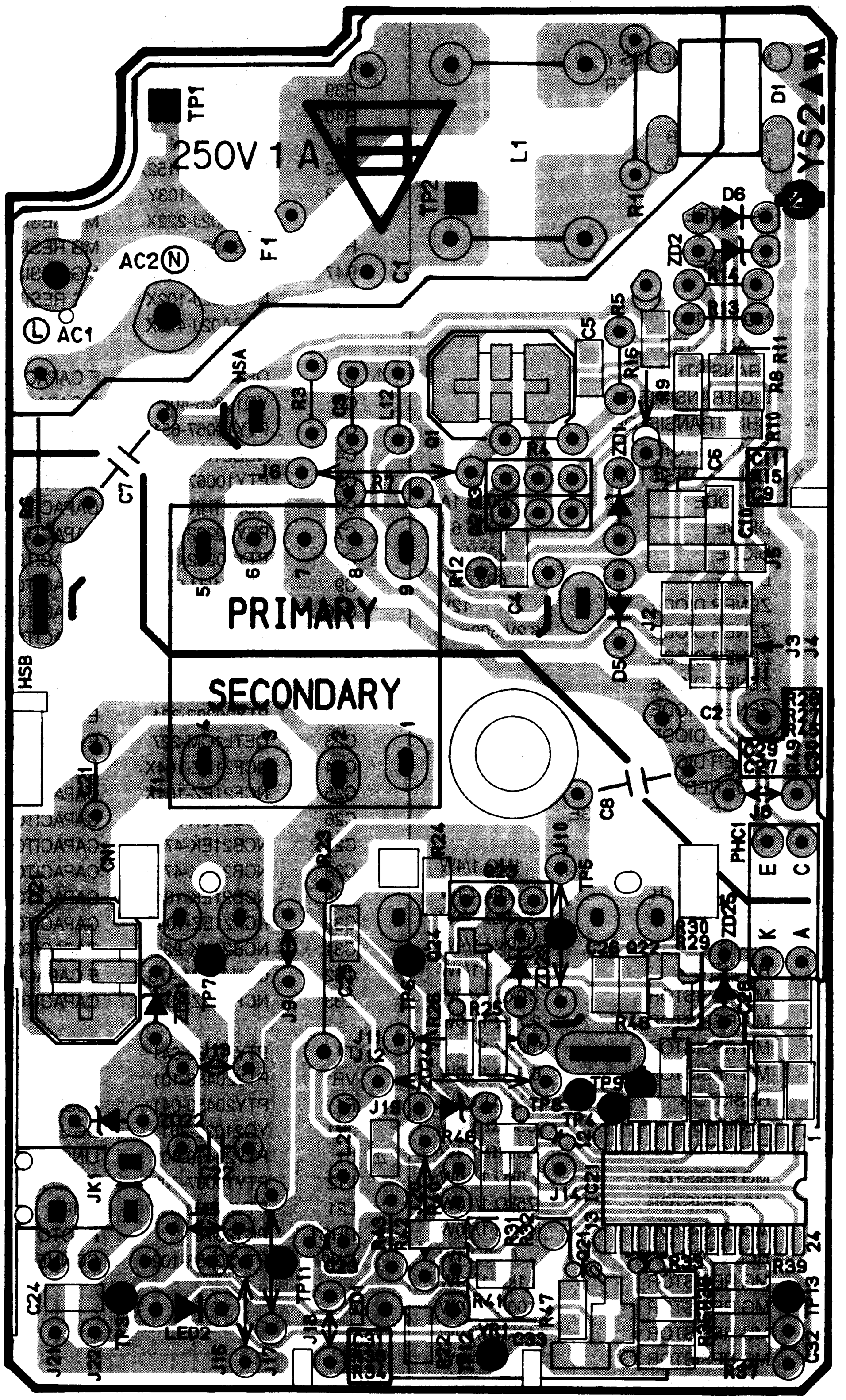
CABINET ASSEMBLY <MA>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	1	PTY20483-013	UPPER CASE
⚠	2	PTY20483-023	LOWER CASE
⚠	3	YQ10531-006	AC POWER CORD
	4	YQ10531-011	TAP SCREW
⚠	5	PTY20483-078	INSULATOR B
⚠	6	PTY20483-076	SHIELD PLATE
⚠	7	PTY20483-077	INSULATOR A
	8	PTY20483-079	SCREW for Shield plate

6.3 CIRCUIT BOARD


TP1
250V 1A
L1
D1
TP2
F1
C1
D6
ZD2
R14
R13
R11
R8
AC2 N
L AC1
HSA
C5
R5
R16
R3
L12
Q1
R4
C6
C11
R15
C9
C7
J6
R7
ZD1
PRIMARY
R12
C4
J2
J3
J4
D5
HSB
SECONDARY
C2
C8
R28
R27
R29
C29
C27
J5
PHC1
E
C
K
A
J10
TP5
R24
R30
R29
ZD25
Q22
C26
TP7
J9
TP6
Q24
R25
TP9
TP8
TP4
ZD22
J19
R46
JK1
J14
IC2
1
24
R39
TP13
C32
R37
C24
TP3
LED2
TP11
J18
J16
J21
J22
R47
C33
R35
R34
C31
YS2

6.4 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <91>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
⚠	PW1	PTY20483-052	MAIN BOARD ASS'Y	
	HD1	PTY20483-081	TERMINAL HOLDER	
	TB1	PTY20483-082	TERMINAL A	
	TB2	PTY20483-083	TERMINAL B	
⚠	HS1	PTY20483-071	HEAT SINK A	
⚠	HS2	PTY20483-072	HEAT SINK B	
	OT1	PTY10067-551	TAP SCREW	
	IC21	M61030AFP	CHARGE CONTROL IC 24pin SOP	
	Q1	FS2KM18A	MOS FET	
	Q2	2SD2227	TRANSISTER	
	Q3	2SD2227	TRANSISTER	
	Q21	UN2211TX	DIG.TRANSISTER	
	Q22	2SA1037AK/QR/-X	CHIP TRANSISTOR	
	Q23	2SB1434	TRANSISTOR	
	Q24	2SA1037AK/QR/-X	CHIP TRANSISTOR	
	D1	S1WBA60	B. DIODE	600V 1A
	D5	1SS244T77	DIODE	200V 6A
	D6	1SS244T77	DIODE	200V 6A
	D21	MA7D56	DIODE	60V 10A
	ZD1	MTZJ12C-T2	ZENER DIODE	12V
	ZD2	MTZJ6.2B-T2	ZENER DIODE	6.2V 500mW
	ZD21	MTZJ12C-T2	ZENER DIODE	12V
	ZD22	MTZJ12C-T2	ZENER DIODE	12V
	ZD23	MTZJ12C-T2	ZENER DIODE	12V
	ZD24	MTZJ12C-T2	ZENER DIODE	12V
	ZD25	MA4047NM	ZENER DIODE	4.7V 500mW
	LED1	YQ10531-540	LED RED POWER	
	LED2	YQ10531-542	LED GREEN CHARGE	
	R1	QRN141J-105	RESISTOR	1MΩ 1/4W
	R3	PTY10067-601	MF RESISTER	0.62Ω 1W
	R4	QRE141J-334Y	RESISTOR	330kΩ 1/4W
	R5	QRE141J-334Y	RESISTOR	330kΩ 1/4W
	R7	QRE141J-751Y	RESISTOR	750Ω 1/4W
	R8	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
	R9	NRSA02J-272X	MG RESISTOR	2.7kΩ 1/10W
	R10	NRSA02J-104X	MG RESISTOR	100kΩ 1/10W
	R11	NRSA02J-682X	MG RESISTOR	6.8kΩ 1/10W
	R12	QRE141J-181Y	RESISTOR	180Ω 1/4W
	R13	QRE141J-334Y	RESISTOR	330kΩ 1/4W
	R14	QRE141J-334Y	RESISTOR	330kΩ 1/4W
	R15	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W
	R16	NRSA02J-753X	MG RESISTOR	75kΩ 1/10W
	R22	NRSA02J-621X	MG RESISTOR	620Ω 1/10W
	R23	QRZ0192-R33X	RESISTOR	0.33Ω 1W
	R24	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W
	R25	NRSA02J-101X	MG RESISTOR	100Ω 1/10W
	R26	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
	R27	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W
	R28	NRSA02J-151X	MG RESISTOR	150Ω 1/10W
	R29	NRSA02F-473X	MG RESISTOR	47.0kΩ 1/10W
	R30	NRSA02F-473X	MG RESISTOR	47.0kΩ 1/10W
	R31	NRSA02F-103X	MG RESISTOR	10.0kΩ 1/10W
	R32	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
	R33	NRSA02J-333X	MG RESISTOR	33kΩ 1/10W
	R34	NRSA02F-303X	MG RESISTOR	30.0kΩ 1/10W
	R35	NRSA02F-1372X	MG RESISTOR	13.7kΩ 1/10W
	R36	NRSA02J-223X	MG RESISTOR	22kΩ 1/10W
	R37	NRSA02J-621X	MG RESISTOR	620Ω 1/10W
	R38	NRSA02J-303X	MG RESISTOR	30kΩ 1/10W
	R39	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W
	R40	PTY20450-200	MF RESISTOR	20.0kΩ 1/4W
	R41	NRSA02F-1152X	MG RESISTOR	11.5kΩ 1/10W
	R42	NRSA02F-1152X	MG RESISTOR	11.5kΩ 1/10W
	R43	QRE141J-103Y	RESISTOR	10kΩ 1/4W
	R45	NRSA02J-222X	MG RESISTOR	2.2kΩ 1/10W
	R46	NRSA02J-472X	MG RESISTOR	4.7kΩ 1/10W
	R47	NRSA02J-221X	MG RESISTOR	220Ω 1/10W
	R48	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W
	R49	NRSA02J-473X	MG RESISTOR	47kΩ 1/10W
⚠	C1	QFZ9072-104	F CAPACITOR	0.1μF 275V
	C2	YQ10626-402	E CAPACITOR	47μF 400V
	C3	PTY10067-651	CAPACITOR	1500pF 250V
	C4	NCB21CK-224X	CAPACITOR	0.22μF 16V
	C5	PTY10067-653	CAPACITOR	0.01μF 50V
	C6	NCB21HK-391X	CAPACITOR	390pF 50V
⚠	C7	PTY20292-315	CAPACITOR	1000pF 250V
⚠	C8	PTY20292-315	CAPACITOR	1000pF 250V
	C9	NDC21HJ-680X	CAPACITOR	68pF 50V
	C10	NDC21HJ-151X	CAPACITOR	150pF 50V
	C11	NDC21HJ-151X	CAPACITOR	150pF 50V
	C21	PTY10067-657	CAPACITOR	0.01μF 250V
	C22	PTY20292-321	E CAPACITOR	680μF 16V
	C23	QETL1CM-227	E CAPACITOR	220μF 16V
	C24	NCF21EZ-104X	CAPACITOR	0.1μF 25V
	C25	NCF21EZ-104X	CAPACITOR	0.1μF 25V
	C26	NCB21CK-224X	CAPACITOR	0.22μF 16V
	C27	NCB21EK-473X	CAPACITOR	0.047μF 25V
	C28	NCB21HK-473X	CAPACITOR	0.047μF 50V
	C29	NCB21EK-104X	CAPACITOR	0.1μF 25V
	C30	NCF21EZ-104X	CAPACITOR	0.1μF 25V
	C31	NCB21HK-222X	CAPACITOR	0.0022μF 50V
	C32	QEHA1HM-475	E CAPACITOR	4.7μF 50V
	C33	NCF21EZ-104X	CAPACITOR	0.1μF 25V
⚠	T1	PTY20080-541	SW TRANS	
	VR1	PTY20483-101	VOLUME	2kΩ
⚠	F1	PTY20450-041	FUSE	1A 250V
	JK1	YQ21032-301	DC JACK	
⚠	L1	PTY20450-401	LINE FILTER	
	L12	PTY10067-702	BEAD INDUCTOR	
	L21	PTY20080-533	COIL	
⚠	PHC1	PC123YS	PHOTO COUPLER	
	CN2	PTY20483-102	CONNECTOR	